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Cambridge University of Astronomical Observing

# STORAGE ASTRONOMICAL OBSERVATIONS

MADE AT THE

OBSERVATORY OF CAMBRIDGE

BY

THE REV. JAMES CHALLIS, M.A., F.R.S., F.R.A.S.,

PLUMIAN PROFESSOR OF ASTRONOMY AND EXPERIMENTAL PHILOSOPHY

IN THE UNIVERSITY OF CAMBRIDGE,

AND LATE FELLOW OF TRINITY COLLEGE.

VOL. XIX.

FOR THE YEARS 1852, 1853, AND 1854.



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## P R E F A C E.

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THIS Volume contains the Observations made with the Transit and Mural Circle in the years 1852, 1853, and 1854, and the Occultations of Fixed Stars by the Moon, the Observations of Planets and Comets made with the Northumberland Equatorial in the same interval being reserved for separate publication with those of preceding years.

The Meridian Observations were continued through the three years with the exceptions of an interruption of the Circle and Transit Observations in September 1853, and two interruptions of the Circle Observations in October and November 1854. In the former interval the observations were suspended for the purpose of inserting dark bars in the Telescopes of both instruments to facilitate the observations of faint Stars and Planets, and also apparatus for adjusting the distances of their eye-pieces from the object-glasses, to accommodate the use of the collimating eye-piece to the variations of the lengths of the Telescope tubes by temperature. The suspensions in 1854 were occasioned by the erection of apparatus for mounting two collimators, moveable about the Circle, for measuring the effect of flexure, and by alterations of the Telescope tube required for effecting the collimations. Series of experiments were made with the collimators in 1855, 1856, and 1860, but the results are not yet published.

The observations were nearly all taken by Mr Breen and Mr Todd to April 24, 1854, at which time Mr Todd left the Observatory, and was succeeded by Mr Criswick, who with Mr Breen took the greater part of the observations during the remainder of that year. Occasional observations were made by myself, and among the Transit and Circle observations in September and October of 1852, are some which were taken for the sake of practice by Mr Simmonds, assistant to Mr Carrington at the Redhill Observatory. There are also transits taken by Mr Dunkin, assistant at the Greenwich Observatory, on May 18 and 19, 1853, with reference to the determination of the Longitude of this Observatory by galvanic signals; and some trial observations with the Circle by Mr Henry Todd in August, September, and October, 1854.

The major part of the observations of the three years are directed towards the determination of the places of stars, and more especially of such as are included in the list of 8000 zodiacal stars, observations of which were commenced in 1849. Great pains have been taken in the verification of the Right Ascensions and North Polar Distances which were found to differ considerably from those of existing Catalogues, and all ascertained errors of the latter have been carefully indicated.

The observations of the Moon and Moon-culminating stars were discontinued at the end of 1852. The Sun, the Planet Neptune, and Minor Planets, were observed in that and the two following years. All these observations are compared with calculated places, and if no Ephemeris was available for this purpose, the places were directly computed from Elements of the orbits. This was done not with the view of furnishing data for correcting the Elements, but to give the means of judging of the value of each observation, and to indicate any that were anomalous; and also to decide in some cases whether or not the observed object was a star mistaken for the Planet.

All the observations have been completely reduced with the strictest attention to accuracy, and the calculations have all been examined. The large amount of calculation, and the scrutinies of the places of the stars, have occupied much time; and a considerable quantity of new matter has been inserted in the Introduction, relating to the calculation of the pivot-corrections of the Transit, and to descriptions and determinations rendered necessary by the use of new apparatus. These circumstances have retarded the publication of the Volume.

J. CHALLIS.

CAMBRIDGE OBSERVATORY,  
*February 28, 1861.*



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# ERRATA.

## IN VOLUME XVIII.

- P. xviii, line 21. For 5,31445 read 5,31443.
- p. xxx, line 36. For East or West read West or East.
- p. liv, in the Table, under N.P.D. For -41,2, -29,3, -36,3, -34,4, read -3,4, -1,5, +1,5, +3,4. The same corrections are required in the first column of N.P.D. in p. lv.
- p. 104, No. 429. For 108.12 read 108.7.
- p. 111, Nos. 892 and 903. In the R.A., for 3,63 read 4,63, and for 55,22 read 56,22.
- p. 136, No. 3. For H. C. 18020 read B.A.C. 3115.
- p. 142, No. 426. For H. C. 29778 read H. C. 29779. Also dele the brackets enclosing the seconds of R.A., and the note at the bottom of the page.
- p. 174, April 5. For  $\times$  N.P.D. 92°.11' read Bessel xii. 126.
- p. 174, April 10. For 19 Leonis Min. read B.A.C. 3398.
- p. 195, Oct. 12. For  $\times$  N.P.D. 91°.17' read Bessel o. 828.

- p. 212, No. 38. Insert the name Bessel o. 828. For 91.17 read 91.12, and dele the note.
- p. 217, No. 363. For 19 Leonis Minoris read B.A.C. 3398.
- p. 218, No. 466. Insert the name Bessel xii. 126; for 92.10 read 92.24; in the R.A., for 24,46 read 34,46; and dele the brackets.
- p. 220, No. 622. For 108.12 read 108.7.
- p. 348, No. 55. In the columns of Corrections, N.P.D., R.A., and Annual Variations, for -0,36, 76.13, 48,89 and 3,308, read +0,36, 72.13, 49,61 and 3,381 respectively.
- p. 351, No. 216. For 75.20 read 75.16.
- p. 356, No. 585. For 106.8 read 106.3.
- p. 392, No. 195. For 5.38.58 read 5.39.28.
- p. 401, No. 802. In the column of Corrections, for +14,67 read +15,51, and in that of N.P.D., for 7,14 read 7,98.
- p. 413, in the *Formula of Calculation*. For cosec  $\lambda$  read cos  $\lambda$ .

## IN THE PRESENT VOLUME.

- P. 10, in the column of clock-errors. Dele the bars after March 29 and March 30, the corrections for clock error on those days depending on the observations of clock-stars on April 1.
- p. 12, in the column of Level Error. For +,05 read +0,5.
- p. 22, in the notes. For the first (c) read (e).
- p. 31, note (m). For Symonds read Simmonds, as the name is given in note (a), p. 81.
- p. 35, Nov. 5. For Polaris P read Polaris SP.
- p. 50, note to No. 166. For 7<sup>h</sup>.34<sup>m</sup>.43<sup>s</sup> read 7<sup>h</sup>.33<sup>m</sup>.4<sup>s</sup>.
- p. 62, Feb. 11. For H. C. 15050 read 79 Geminorum.
- p. 71, May 3. For H. C. 21626 read B. (w.) xi. 206.
- p. 71, May 4. For H. C. 23948 read B.A.C. 4312.
- p. 72, May 31. For  $\beta^2$  Scorpii read B.A.C. 5330, and for  $\beta^1$  Scorpii read  $\beta$  Scorpii.
- p. 117, line 15. Insert  $\frac{\delta\lambda}{15}$  before  $\Sigma$ .
- p. 122, Disappearance of 94 Virginis. In the value of  $\delta\lambda$ , for 0,2499 read 0,2284, and for 0,2387 read 0,2396; in the value of  $\delta S$ , for +0,0004 read -0,0004; and in the Final Equation, for 0,5874, 0,4641, 0,5396, read 0,5886, 0,4460, 0,5403 respectively.
- p. 123, Disappearance of B.A.C. 7049. In the value of  $\delta\lambda$ , for 0,0716, 0,0824 read 0,0919, 0,0813; in that of  $\delta S$ , for +0,0001 read -0,0001; and in the Final Equation, for 0,7513, 0,2695, 0,3840 read 0,7522, 0,2573, 0,3845 respectively.
- p. 136, end of April 23. Insert bars across the columns of clock error and clock rate.
- p. 143, June 16. For H. C. 29778 read H. C. 29779.
- p. 155, Oct. 28. Insert B after Astræa.
- p. 175, No. 496. For H. C. 29778 read H. C. 29779.

- pp. 188 and 189, March 29 and April 1. For  $\times$  R. 10<sup>h</sup>.14<sup>m</sup>.29<sup>s</sup> read  $\times$  R. 10<sup>h</sup>.13<sup>m</sup>.45<sup>s</sup>.
- pp. 188 and 189, March 29 and 30. For  $\times$  R. 10<sup>h</sup>.36<sup>m</sup>.59<sup>s</sup> read  $\times$  R. 10<sup>h</sup>.35<sup>m</sup>.40<sup>s</sup>.
- pp. 190 and 191, April 30, May 4, and May 7. For  $\times$  R. 11<sup>h</sup>.54<sup>m</sup>.59<sup>s</sup> read  $\times$  R. 11<sup>h</sup>.54<sup>m</sup>.26, in both the R.A.
- p. 191, May 5. For  $\times$  R. 12<sup>h</sup>.59<sup>m</sup>.45<sup>s</sup> read B. (w.) xii. 1025.
- p. 233, line 15. Insert  $\frac{\delta\lambda}{15}$  before  $\Sigma$ .
- pp. 254 and 255, March 4 and 15. For 103°.30' read 103°.26'.
- p. 259, April 4. Insert in the column of clock rates 1,40 and a bar before the observation of  $\alpha$  Andromedæ.
- pp. 273, Aug. 17. For B.A.C. 7322 read  $\theta$  Capricorni.
- p. 281, Sept. 30. In the Apparent R.A. of B. (w.) xxi. 650, for 28 read 27.
- p. 289, in the column of Level Error. Insert +0",8 and a bar before Dec. 10.
- p. 313, Sept. 1. In the concluded Circle reading and the Apparent N.P.D. of  $\delta$  Ursæ Minoris, for 23,32, 51,00 read 22,97, 50,65.
- p. 325, in the running Title. For 1853 read 1854.
- p. 352. Insert the Catalogue Number 343 opposite to B.A.C. 4896, and change that of  $\beta$  Ursæ Minoris to 344.
- p. 353, No. 348. In the approximate R.A., for 50 read 47.
- p. 354, No. 387. Sept. 1, in the column of seconds of N.P.D., for 3,29 read 2,94, and in the column of concluded N.P.D., for 2,05 read 2,01.

For an account of other corrections, and of the reasons for some of the above, see the Addenda to the Introduction, p. lxxv.



# CAMBRIDGE OBSERVATIONS.

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## INTRODUCTION.

THE *Instruments* and *Methods of observing* employed in taking the observations recorded in this Volume, are described in the Introductions to the Volumes of observations of 1838 and previous years. The following pages contain explanations of the tabulated observations and such occasional notices as could not be given at length in the body of the work, together with an account of the constants and formulæ used in the Calculations. Tables employed in the reduction of the observations are added to the Introduction.

### OBSERVATIONS OF 1852.

#### 1. *Apparent Right Ascensions observed with the Transit.* Pages 1—39.

The first division of the tabular portion of the work is allotted to the Transit Observations and the Calculation of Apparent Right Ascensions.

The *first column* contains the day of the month, supposed always to commence with the Sun's meridian passage.

The *second column* contains the names of the objects observed. With respect to nomenclature the following rules have been adhered to as closely as possible. Stars contained in the Nautical Almanac, have the same names here given them as in that work. Stars in the Catalogue of the British Association, and not in the Nautical Almanac, are named in preference, by the letters in that Catalogue; next, by Flamsteed's numbers; and lastly, by the numbers of the Catalogue. A star not coming under any of the above classes, if found in Weisse's reduced Catalogue of stars in Bessel's Zones (1846), is designated by the hour and number of that Catalogue preceded by the letters B. (w.). If, not being in Weisse's Catalogue, the star is in the British Association reduced Catalogue of stars contained in the *Histoire Celeste* of Lalande, it is named by the number of this Catalogue with the letters H. C. prefixed. All other stars are designated by their approximate North Polar Distances.

In observations of double and multiple stars, the rule generally followed both in the Transit and Circle observations is, to select the brightest when decidedly brighter than the others, and of two or more nearly equally bright, to take the preceding. Sometimes the observer notes the one selected as *preceding, following, north, south, north preceding, north following, south preceding, south following*, by the letters *p, f, n, s, np, nf, sp, sf*, in their usual signification, the preceding star being that of less R.A., and the north star that of less N.P.D. This is done when the application of the foregoing rule is doubtful, or when the stars are very close, to shew that they are seen separate, or to facilitate the identifying of the stars. The above letters are placed after the names of the stars in the second column, only in case the observer has thus noted at the time of observation the star selected.

The *seven succeeding columns* contain the seconds, by the Transit clock, of the times of passage over the seven wires. It has been thought unnecessary to give the hours and minutes, as they may be readily inferred, by means of the Table of Intervals below, from

the concluded time of transit over the mean of the seven wires, given in the next column. The wires are distinguished by the letters *A, B, C, D, E, F, G*; and stars above the Pole pass them in this order when the Illumination end of the axis is East.

When, as not unfrequently happens from atmospheric and accidental causes, the times of transit across all the wires cannot be observed, a correction is necessary for reducing the mean of the observed times to the time of transit over the mean of all the wires. This reduction is effected by adding (with the proper sign) to the mean of the observed times, the sum of the distances in time of the omitted wires from the mean of all, divided by the number of the observed times. (See Introduction to the Observations of 1836, p. xiii.)

The following Table of Intervals of the seven wires from the mean of all, used in the year 1852, was calculated from *all* the intervals between consecutive wires given by the transits of Polaris from the beginning of 1852 to September 21, 1853, at which date a new set of wires was inserted. As the wire *C* on September 10, and the wire *A* on December 10, were replaced by new ones (these wires having been found broken), three sets of intervals have been calculated. In calculating the first set the intervals from *B* to *C* and from *C* to *D*, obtained from the transits to September 10, 1852, have been used, and those from the transits in the remainder of the period have been used in calculating the second and third sets. Also the intervals from *A* to *B* given by the transits to Dec. 10, 1852, have been used for the first and second sets, and those given by the remaining transits, for the third set.

Wire.	From Jan. 1 to Sept. 10.			From Sept. 10 to Dec. 10.			From Dec. 10 to Dec. 31.		
	Interval for an Equatorial Star.	Interval for Polaris. Decl <sup>n</sup> . = 88°. 31'.	Interval for δ Ursæ Minoris. Decl <sup>n</sup> . = 86°. 36'.	Interval for an Equatorial Star.	Interval for Polaris. Decl <sup>n</sup> . = 88°. 31'.	Interval for δ Ursæ Minoris. Decl <sup>n</sup> . = 86°. 36'.	Interval for an Equatorial Star.	Interval for Polaris. Decl <sup>n</sup> . = 88°. 31'.	Interval for δ Ursæ Minoris. Decl <sup>n</sup> . = 86°. 36'.
A	s. - 40,328	m. - 26. 1,27	s. - 11. 20,28	s. - 40,336	m. - 26. 1,56	s. - 11. 20,41	s. - 40,327	m. - 26. 1,22	s. - 11. 20,26
B	- 26,886	- 17. 19,61	- 7. 33,42	- 26,893	- 17. 19,90	- 7. 33,55	- 26,895	- 17. 19,96	- 7. 33,57
C	- 13,535	- 8. 43,01	- 3. 48,24	- 13,655	- 8. 47,63	- 3. 50,26	- 13,656	- 8. 47,69	- 3. 50,28
D	- 0,041	- 1,60	- 0,70	- 0,008	- 0,31	- 0,14	- 0,010	- 0,37	- 0,16
E	+ 13,601	+ 8. 45,46	+ 3. 49,35	+ 13,635	+ 8. 46,85	+ 3. 49,91	+ 13,633	+ 8. 46,79	+ 3. 49,89
F	+ 26,873	+ 17. 19,11	+ 7. 33,20	+ 26,906	+ 17. 20,40	+ 7. 33,76	+ 26,905	+ 17. 20,34	+ 7. 33,73
G	+ 40,317	+ 26. 0,85	+ 11. 20,09	+ 40,351	+ 26. 2,14	+ 11. 20,65	+ 40,349	+ 26. 2,08	+ 11. 20,63

The intervals for the Declination  $88^{\circ}.31' + n''$  are obtained from those for the declination  $88^{\circ}.31'$ , by adding the quantities  $-0^{\circ}.294n$ ,  $-0^{\circ}.195n$ ,  $-0^{\circ}.099n$ ,  $0^{\circ}.000n$ ,  $+0^{\circ}.099n$ ,  $+0^{\circ}.195n$ ,  $+0^{\circ}.294n$ , respectively; and the intervals for the Declination  $86^{\circ}.36' + n''$  from those for the Declination  $86^{\circ}.36'$ , by adding respectively,  $-0^{\circ}.056n$ ,  $-0^{\circ}.037n$ ,  $-0^{\circ}.019n$ ,  $0^{\circ}.000n$ ,  $+0^{\circ}.019n$ ,  $+0^{\circ}.037n$ ,  $+0^{\circ}.056n$ .

The intervals for all other stars are obtained by multiplying the intervals for an equatorial star by the cosecant of N.P.D., and those for the Sun and planets by multiplying by the cosecant of N.P.D., and the additional factor  $1 + \frac{I}{3600}$ , *I* being the horary variation of R.A.

The position of the Transit is indicated in the space immediately below the columns by the terms 'Illumination East,' or 'Illumination West,' according as the pivot which is perforated to admit the light of a lamp for illuminating the field of view is East or West. In the same space the above Equatorial Intervals are inserted in the order in which they are passed over by a star above the pole.



The concluded times of transit over the mean of the seven wires, as given by the clock, are placed in the *tenth column*. When the object has been observed at all the wires, the concluded time is merely the mean of the times at the seven wires. In case of an incomplete observation, the concluded time is the mean of the noted times corrected for the omitted times in the manner already explained.

The concluded times of transit over the mean of the wires have been corrected for the forms of the pivots by quantities interpolated from the following table.

North Polar Distance.	Correction Illumination East.	Correction Illumination West.	North Polar Distance.	Correction Illumination East.	Correction Illumination West.
<sup>0</sup> - 3,4	+ 0,15	+ 0,50	<sup>0</sup> + 80	+ 0,35	+ 0,10
- 1,5	+ 0,12	+ 0,45	85	+ 0,37	+ 0,12
+ 1,5	- 0,60	+ 0,45	90	+ 0,37	+ 0,17
3,4	- 0,10	+ 0,41	95	+ 0,35	+ 0,20
50	+ 0,18	+ 0,20	100	+ 0,33	+ 0,21
55	+ 0,20	+ 0,18	105	+ 0,33	+ 0,24
60	+ 0,23	+ 0,17	110	+ 0,35	+ 0,24
65	+ 0,26	+ 0,20	115	+ 0,37	+ 0,24
70	+ 0,29	+ 0,17	120	+ 0,38	+ 0,26
+ 75	+ 0,32	+ 0,12	+ 125	+ 0,40	+ 0,27

The above corrections for Illumination East are the means between the values for 1850 and 1854, given in the Introduction of Vol. XVIII, page liv; which were obtained directly from measures taken in those years in the manner described in pages xxx—xxxiv of the same Volume. The corrections for Illumination West were deduced from the results of measures taken in 1854, upon considerations which are stated in p. liv of Vol. XVIII; and although the absolute corrections are probably not obtained with accuracy in this way, there is reason to conclude from measures taken subsequently to 1854, that the differences of the corrections for different N.P.D., which are of chief importance in the reduction of the transits, are sufficiently accurate. The micrometer measures and the details of the calculation by which the corrections for 1854 were obtained, will be most conveniently given in the part of the Introduction relating to the transits of 1853.

The columns which next follow contain steps of the calculation by which the Apparent Right Ascensions are inferred from the concluded times of transit; which is done by applying corrections for *Collimation Error*, *Level Error*, *Azimuth Error*, and *Clock Error*. The methods of obtaining these corrections will here be severally stated in the order of their application.

*Collimation Error.*—The errors of collimation in 1852 were determined exclusively by the collimating eye-piece. The following is the method of using this instrument.

A moveable wooden stage in the Transit Room, (intended originally for taking transits by reflexion for the determination of Level Error), is made to pass over the West Pier by running on a kind of rail-way, and gives the observer a position in which he can look through the Telescope when directed to the Nadir. The form of the collimating eye-piece which I use, is a common inverting microscope of three lenses, to which is attached, beyond the third lens, a piece of plate-glass, inclined at an angle of 45° to the axis of the microscope. The eye-piece of the Telescope being removed, this apparatus is put in its place, so that the plate-glass is between the wires and the microscope; and when the Telescope is directed vertically to a trough of mercury, the wires and their images by reflection become visible as dark lines on a bright ground, by throwing the light of a lamp on the

plate-glass. That the wires and their images may be distinctly seen at the same time, it is necessary that the wires should be accurately in the geometrical focus of the object-glass of the Telescope. The position of the wires of the Transit Telescope was found to satisfy this condition very nearly and has consequently not been changed.

The determination of the collimation error of the middle wire is effected by measuring with the micrometer-wire the interval between the middle wire and the position of the micrometer-wire when it exactly coincides with its own image. This interval, expressed in arc, is the sum or difference of the level error and the collimation error of the middle wire. Hence the level error being ascertained at the time by the Spirit Level, the collimation error becomes known.

This method supposes the pivots to be exactly cylindrical. As the pivots of the Cambridge Transit do not satisfy this condition, I have not trusted to the collimating eye-piece for absolute determinations of error of collimation. Several contemporaneous determinations having been made by the two methods, by comparison of the results two constants have been obtained for correcting the values given by the collimating eye-piece, one for Illumination East and the other for Illumination West. Thus virtually the collimation error is determined by the usual method, and the collimating eye-piece is merely employed as an auxiliary, the use of which is very convenient on account of its being independent of the condition of the atmosphere.

Let  $l_w$  = the true level error, (that is, the angular elevation of the West end of the axis), the Telescope being directed to the Nadir and the Illumination *West*.

$c$  = the collimation error of  $D$ , (that is, the deviation of  $D$  from the true line of collimation Westward) Illumination *West*.

$a$  = the deviation of  $D$  Eastward from the vertical plane through the optical centre of the object-glass, as measured by the collimating eye-piece, Illumination *West*.

$L_w$  = the level error as determined immediately by the Spirit Level, the Telescope being horizontal and directed Southward, and Illumination *West*.

and let  $l_e$ ,  $-c$ ,  $b$ , and  $L_e$  be respectively the same quantities when the Illumination is East. Then, since the deviation of  $D$  from the vertical plane towards the East is equal to the level error diminished by the collimation error, we have

$$\text{Collimation Error of } D \text{ (Illumination West)} = c = l_w - a$$

$$\text{Collimation Error of } D \text{ (Illumination East)} = -c = l_e - b.$$

The values of  $l_w - L_w$  and  $l_e - L_e$  used in 1852 were deduced from contemporaneous determinations of the level error in the years 1852 and 1854 by the collimating eye-piece and the spirit-level. From these the following results were obtained on the supposition that  $l_w = l_e = \frac{a+b}{2}$ , which must be very nearly the case, the same points of the pivots and  $Y$ s being in contact before and after the reversion of the instrument.

Date.	$a$	$b$	$\frac{a+b}{2}$	$L_w$	$L_e$	$L_w - l_w$	$L_e - l_e$
1852 Sept. 24	+2,10	-3,21	-0,56	-3,50	-0,80	-2,94	-0,24
24	+2,10	-2,23	-0,07	-3,50	-0,10	-3,43	-0,03
29-30	+0,72	-3,34	-1,31	-3,29	-0,87	-1,98	+0,44
Nov. 5	+1,31	-2,99	-0,84	-3,16	-0,36*	-2,32	+0,48
1854 Apr. 4	+3,46	-3,05	+0,20	-2,93	-0,36	-3,13	-0,56
6	+2,99	-3,05	-0,03	-2,51	-0,20	-2,48	-0,17
12	+2,44	-3,22	-0,39	-3,15	-0,43	-2,76	-0,04

\* By the levelling on Nov. 4.



Hence the mean value of  $L_w - l_w = -2''.72$ , and that of  $L_e - l_e = -0''.02$ , which are adopted for 1852. The values of  $L_w - l_w$  and  $L_e - l_e$  actually employed in calculating the corrections for the forms of the pivots from the measures of 1854 were  $-2''.65$  and  $+0''.01$  and consequently those corrections are slightly in error. The errors will be allowed for by adding the halves of the excesses  $+0''.07$  and  $+0''.03$  to  $L_w$  and  $L_e$  respectively, the pivot corrections depending equally on the measures of 1850 and 1854. Since by the Table in p. ii the mean of all the wires is nearer to the Illumination end of the axis than  $D$  by  $0''.62$  from Jan. 1. to Sept. 10, by  $0''.12$  from Sept. 10 to Dec. 10, and by  $0''.15$  from Dec. 10 to the end of the year, the corrections of Collimation Error of the mean of the wires are given by the following formulæ, which include also the correction  $-0''.18$  for diurnal aberration, and the small corrections just mentioned.

	Correction of Collimation, Illumination East.	Correction of Collimation, Illumination West.
From Jan. 1 to Sept. 10 .....	$L_e - b - 0''.76$	$L_w - a + 3''.20$
From Sept. 10 to Dec. 10 .....	$L_e - b - 0''.26$	$L_w - a + 2''.70$
From Dec. 10 to Dec. 31 .....	$L_e - b - 0''.33$	$L_w - a + 2''.73$

The corrections of collimation error in 1852 were determined as follows.

April 7, 21<sup>h</sup>. Mr Breen placed the micrometer-wire in such a position that the intervals from it to the wire  $D$ , from  $D$  to its image, and from the image of  $D$  to that of the micrometer-wire, were by estimation equal. The mean of eight micrometer readings for this position was  $24''.260$ , and the mean of ten readings for coincidence with  $D$  was  $23''.890$ . Hence, as the Illumination was West, and the readings increase from the Illumination end of the axis,  $D$  was to the East of the vertical plane through the optical centre of the object-glass by *half* the difference of the above readings, that is,  $0''.185$ , which, since  $1'' = 17''.06$ , is equal to  $3''.16$ . Hence  $a = +3''.16$ ; and as by the Table of Level Errors farther on,  $L_w = +0''.79$ , it follows that the correction of the Collimation error of the mean of the wires, Illumination West, is  $+0''.79 - 3''.16 + 3''.20 = +0''.83$ . The value  $+0''.9$ , used from the beginning of the year to May 24, was obtained by less exact calculation.

August 14, 3 $\frac{1}{2}$ <sup>h</sup>. The Illumination being West, the mean of six micrometer readings for coincidence of the micrometer-wire with its image was  $24''.053$ , and the mean of six readings for coincidence with  $D$  was  $23''.865$ . As the latter reading is *less* than the other,  $D$  was to the *West* of the vertical plane by  $0''.188$ , or  $3''.21$ . Hence, as by levelling at the same time  $L_w = -5''.01$ , the concluded error of collimation  $= -5''.01 + 3''.21 + 3''.20 = +1''.41$ .

August 14, 7<sup>h</sup>—8<sup>h</sup>. The operation was repeated, after raising the instrument to clean the pivots and friction-wheels. The reading for coincidence of the micrometer-wire with its image was  $24''.026$  by eight trials at 7<sup>h</sup>, and  $24''.022$  by six trials at 8 $\frac{1}{4}$ <sup>h</sup>, a new set being taken because the first did not appear to be trustworthy. During the second the image was very faint, owing probably to the surface of the mercury not being sufficiently clear. The mean of six readings for coincidence with  $D$  was  $23''.859$ . Hence  $D$  was to the West of the vertical plane by  $0''.165$ , or  $2''.82$ . By a second levelling, taken after replacing the instrument,  $L_w = -4''.95$ . Hence the concluded error of collimation  $= -4''.95 + 2''.82 + 3''.20 = +1''.07$ . The mean between this and the preceding determination is  $+1''.24$ , which sufficiently agrees with the value  $+1''.3$  used from May 24 to Sept. 9.

On Sept. 10 the wire-frame was taken out to replace the wire  $C$ , which disappeared



from some unknown cause between the transits of Sept. 9 and Sept. 10. On Sept. 18, 10<sup>h</sup>, I took measures for collimation error. The image of the micrometer-wire was placed mid-way between the wire and  $D$ , and the mean of six readings for this position was 23<sup>r</sup>,701. The mean of six readings for coincidence with  $D$  was 24<sup>r</sup>,912. Hence the reading for vertical plane = 23<sup>r</sup>,701 +  $\frac{1}{4}$ (24<sup>r</sup>,912 - 23<sup>r</sup>,701) = 24<sup>r</sup>,004. Also by taking directly the coincidence of the micrometer-wire with its image, the mean of eight readings gave 23<sup>r</sup>,999. By the mean of the two results  $a = +0^{\circ},911 = +15'',54$ , and by levelling on Sept. 17,  $L_w = -4'',32$ . Hence the concluded error of collimation, Illumination West, =  $-4'',32 - 15'',54 + 2'',70 = -16'',66$ .

Sept. 18, 10<sup>h</sup> $\frac{1}{2}$ . After reversing the Transit, I placed the image of the micrometer-wire midway between the wire and  $D$ , and obtained by the mean of six readings 23<sup>r</sup>,437 for this position. At the same time the mean of nine readings for coincidence with  $D$  was 24<sup>r</sup>,891. Hence the reading for the vertical plane = 23<sup>r</sup>,437 +  $\frac{1}{4}$ (24<sup>r</sup>,891 - 23<sup>r</sup>,437) = 23<sup>r</sup>,800. The mean of six readings for coincidence of the micrometer-wire with its image gave 23<sup>r</sup>,828. Taking the mean of these results, the distance of  $D$  from the vertical plane = 24<sup>r</sup>,891 - 23<sup>r</sup>,814 = 1<sup>r</sup>,077 = 18'',37. Hence, the Illumination being East, and the reading for  $D$  greater than that for the vertical plane,  $b = -18'',37$ . By levelling on Sept. 20,  $L_e = -0'',78$ . Consequently the concluded error of collimation =  $-0'',78 + 18'',37 - 0'',26 = +17'',33$ .

The values of collimation error actually employed for the transits from Sept. 10 to Sept. 17, and from Sept. 20 to Sept. 24, were deduced from the formula, Collimation Error of  $D = \pm \frac{a-b}{2}$ , according as the Illumination is East or West. By adding the reduction to the mean of the wires, the correction for diurnal aberration, and the small corrections above noticed, we have for the concluded error of Collimation, Illumination West,  $-16'',97 + 0'',12 - 0'',18 + 0'',04 = -16'',99$ , and for the concluded error of Collimation, Illumination East,  $+16'',97 - 0'',12 - 0'',18 + 0'',02 = +16'',71$ . These values are probably more accurate than the foregoing, which depend upon Level Errors not taken contemporaneously with the measures for collimation error. The large amount of the collimation error after replacing the wire-frame on Sept. 10, was owing to its being misplaced in consequence of an error of 1<sup>r</sup> in recording the measures of Aug. 14.

After the passage of the Sun on Sept. 24, I adjusted the micrometer-wire to the vertical direction by making it bisect the image of a point in the focus of the collimating Telescope, while, by moving the Transit Telescope, the image was made to pass from the top to the bottom of the field. The cross on Grantchester tower was too unsteady and indistinct to be used for this purpose. After this adjustment the wire  $D$  was placed parallel to the micrometer-wire. The wire-frame was then moved to diminish the collimation error, and the following measures were taken to determine its value.

The Illumination being East, the mean of six readings for coincidence of the micrometer-wire with its image was 23<sup>r</sup>,737, and the mean of six readings for coincidence with  $D$ , 23<sup>r</sup>,925. Hence  $D$  was to the West of the vertical plane by 0<sup>r</sup>,188, and  $b = -3'',21$ . By levelling at the same time,  $L_e = -0'',80$ . Hence the concluded error of collimation =  $-0'',80 + 3'',21 - 0'',26 = +2'',15$ .

Sept. 24, 3<sup>h</sup>. The Transit was reversed. The mean of seven readings for coincidence of the micrometer-wire with its image was 23<sup>r</sup>,807, and the mean of six readings for coincidence with  $D$  was 23<sup>r</sup>,930. The former coincidences were uncertain on account of the micrometer-wire being very close to the wire  $D$ , and the latter were taken, not as usual by alternate contacts, but by actual coincidences of the wires, which were



judged of by the coincidences of their images. The Illumination being West,  $D$  was to the East of the vertical plane by  $0^{\circ}.103$ , and consequently  $a = +2''.10$ . Hence, the value of  $L_w$  by levelling at the same time being  $-3''.50$ , the concluded Error of Collimation  $= -3''.50 - 2''.10 + 2''.70 = -2''.90$ .

Sept. 24,  $4\frac{1}{2}^h$ . The Transit was again reversed. The micrometer-wire being so placed that it and the wire  $D$  were equidistant from the image of  $D$ , the mean of six readings was  $23^{\circ}.421$ . At the same time the mean of six readings for coincidence with  $D$  was  $23^{\circ}.939$ . Hence the distance of  $D$  from the vertical plane was  $\frac{1}{4}(23^{\circ}.939 - 23^{\circ}.421) = 0^{\circ}.130$ , and the reading for the vertical plane was  $23^{\circ}.939 - 0^{\circ}.130 = 23^{\circ}.809$ . The mean of eight readings for coincidence of the micrometer-wire with its image was  $23^{\circ}.807$ . Taking the mean of these two results,  $D$  was to the West of the vertical plane by  $0^{\circ}.131$ , the Illumination being East. Hence  $b = -2''.23$ ; and  $L_e$ , by levelling at the same time, being  $-0''.10$ , the concluded Error of Collimation  $= -0''.10 + 2''.23 - 0''.26 = +1''.87$ .

By the first and second measures of Sept. 24,  $\frac{1}{2}(a - b) = +2''.66$ . Hence the concluded error of collimation, Illumination East, is  $+2''.66 - 0''.12 - 0''.18 + 0''.02 = +2''.38$ , and the concluded error of collimation, Illumination West, is  $-2''.66 + 0''.12 - 0''.18 + 0''.04 = -2''.68$ . By the second and third measures of the same day,  $\frac{1}{2}(a - b) = +2''.17$ . Hence the concluded errors of collimation, Illumination East and West, are respectively,  $+1''.89$  and  $-2''.19$ .

The mean of the determinations, Illumination East, viz.  $+2''.15$ ,  $+1''.87$ ,  $+2''.38$ ,  $+1''.89$ , is  $+2''.07$ , which nearly coincides with the first, and is used on Sept. 25.

Sept. 30,  $0^h$ . The mean of eight readings for coincidence of the micrometer-wire with its image was  $23^{\circ}.714$ . Between the sixth and seventh the instrument was moved to observe the Sun; but the two last agreed closely with the mean of all. At the same time the mean of six readings for coincidence with  $D$  was  $23^{\circ}.910$ . Hence, the Illumination being East,  $D$  was to the West of the vertical plane by  $0^{\circ}.196$ , and consequently  $b = -3''.34$ . By levelling just before,  $L_e = -0''.87$ . Hence the concluded error of collimation  $= -0''.87 + 3''.34 - 0''.26 = +2''.21$ .

The instrument was then reversed and at  $5^h$  the level error was determined by Mr Breen. At  $7^h$  the following measures were taken for collimation error. As the wire  $D$  very nearly coincided with its image, the position of the vertical plane was found by making the micrometer-wire and its image bisect an equal number of times a small speck on one of the horizontal wires. Five bisections of each kind were taken, and the mean of all gave  $23^{\circ}.889$  for the reading corresponding to the vertical plane. Six coincidences with  $D$  gave for the mean reading,  $23^{\circ}.931$ . Hence, the Illumination being West,  $a = +0^{\circ}.042 = +0''.72$ . And  $L_w = -3''.29$ . Hence the concluded error of collimation  $= -3''.29 - 0''.72 + 2''.70 = -1''.31$ .

By the first and second sets of measures,  $\frac{1}{2}(a - b) = +2''.03$ . Hence the concluded error of collimation, Illumination East, is  $+2''.03 - 0''.12 - 0''.18 + 0''.02 = +1''.75$ , and that for Illumination West is  $-2''.03 + 0''.12 - 0''.18 + 0''.04 = -2''.05$ . The value  $+1''.7$  is used from Sept. 28 to Oct. 13, being thought preferable to the other determination as being independent of Level Error.

Sept. 30,  $8^h$ . Shortly after the last measures the instrument was again reversed, and new measures were taken, which were accidentally overlooked in calculating the error of collimation adopted from Sept. 28. By these measures the mean of six readings for coincidence of the micrometer-wire with its image was  $23^{\circ}.760$ , and the mean of eight readings for coincidence with  $D$  was  $23^{\circ}.913$ . Hence, the Illumination being East,  $b = -0^{\circ}.153 = -2''.61$ . Taking the value of  $L_e$  obtained Sept. 29,  $23^h$ , viz.  $-0''.87$ , there being no levelling after the reversion, we have for the concluded collimation error,  $-0''.87 + 2''.61 - 0''.26 = +1''.48$ .



By the measures before and after the last reversion  $\frac{1}{2}(a-b) = +1''.67$ , and the concluded error of collimation, Illumination East,  $= +1''.67 - 0''.12 - 0''.18 + 0''.02 = +1''.39$ . The mean of this and the foregoing result is  $+1''.44$ , which does not differ considerably from the adopted value.

Nov. 5, 9<sup>h</sup>. The mercury was agitated by wind. The micrometer reading for the vertical plane, obtained by four coincidences of the micrometer-wire with its image, and two bisections of a small speck taken as on Sept. 30, was  $23''.721$ ; and the mean of four readings for coincidence with  $D$  was  $23''.896$ . Hence, the Illumination being East,  $D$  was to the West of the vertical plane by  $0''.175$ , and consequently  $b = -2''.99$ . By levelling Nov. 4, 22<sup>h</sup>,  $L_e = -0''.36$ . Hence the concluded error of collimation  $= -0''.36 + 2''.99 - 0''.26 = +2''.37$ .

Nov. 5, 23 $\frac{1}{2}$ <sup>h</sup>. The wind was high and the mercury waving. By six bisections of a small speck, taken as on Sept. 30, the reading for vertical plane was  $23''.819$ , and the mean of six readings for coincidence with  $D$  was  $23''.896$ . The Illumination being West,  $D$  was to the East of the vertical plane by  $0''.077$ , so that  $a = +1''.31$ . Hence,  $L_w$  being equal to  $-3''.16$  by contemporaneous levelling, the concluded error of collimation  $= -3''.16 - 1''.31 + 2''.70 = -1''.77$ .

By the two sets of measures  $\frac{1}{2}(a-b) = +2''.15$ . Hence the concluded Error of Collimation is  $+2''.15 - 0''.12 - 0''.18 + 0''.02 = +1''.87$ , Illumination East, and  $-2''.15 + 0''.12 - 0''.18 + 0''.04 = -2''.17$ , Illumination West. These results are preferable to the preceding, being independent of Level Error. The value  $+1''.8$ , obtained by a different calculation, is used from Oct. 17, and the value  $-2''.2$  from Nov. 5.

After the insertion of a new wire  $A$  on Dec. 10, the error of collimation was not determined till Jan. 18, 1853, on which day, at 3<sup>h</sup>, the following measures were taken. The Temperature in the Transit Room was  $41^\circ$ . The mean of eight readings for coincidence of the micrometer-wire with its image was  $23''.988$ , and the mean of seven readings for coincidence with  $D$  was  $24''.976$ , a mistake of  $1''$  having been made in replacing the wire-frame. The Illumination being West,  $D$  was to the East of the vertical plane by  $0''.988$ , and consequently  $a = +16''.86$ . By levelling at the same time,  $L_w = -3''.99$ . Hence the concluded error of collimation, Illumination West, is  $-3''.99 - 16''.86 + 2''.73 = -18''.12$ . This value is used from Dec. 10, to the end of the year.

The values of collimation error, adopted in the reduction of the transits, are placed in the *eleventh column*, with bars across to indicate the interval during which each value is used.

The correction to the observed time of each transit is in seconds of time,

$$\frac{1}{15} \times \text{collimation error} \times \text{cosecant of N.P.D.},$$

the N.P.D. being considered negative when the star passes below the pole.

*Level Error.*—The angular deviation of the axis of revolution of the Transit from a horizontal plane is found by applying to the pivots a Spirit Level, furnished with a cross-level adjustment, and with graduated scales for reading off the positions of the extremities of the bubble. It is the practice to reverse the level five times, and thus obtain six eastern and six western readings, the scales being first disposed in positions convenient for reading off, which they retain during the whole of the operation. In the graduation of each scale the numbers increase in the direction from the middle of the bubble towards the extremity. Hence the algebraic excess of the sum of the western above the sum of the eastern readings, divided by the whole number of readings, is the measure, in scale-intervals, of the elevation of the west end of the axis above a horizontal plane. This is converted into angular measure by multiplying by  $1''.3$ , the value of the scale-



interval. Since stars above the pole require a positive correction to their time of transit when the west end of the axis is the more elevated, the result thus obtained is the level error with the sign proper for the application of that correction.

The levelling is generally performed once in a week, and the determination is used from the third or fourth day previous. The values of level error adopted in the reduction of the transits are placed in the *twelfth column*, with bars across to indicate the interval during which each value is used.

The following Table contains a list of all the Level Errors obtained in 1852, with the times of levelling, position of the instrument, and Temperature in degrees of Fahrenheit, as shewn by a Thermometer in the Transit Room.

*Level Errors in 1852.*

Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.
Jan. 2. 2	+1,18	West	38	June 9. 2	-1,05	West	55	Sept. 24. 2½	-3,50	West	59
6. 3	+1,13	—	42	14. 2	-1,53	—	60	24. 4	-0,10	East	58
20. 2	+1,42	—	46	22. 2	-2,74	—	62	27. —	-1,06	—	60
28. 2	+1,25	—	43	28. 2	-2,24	—	63	29. 23	-0,87	—	55
Feb. 4. 2	+0,34	—	47	July 5. 2	-2,93	—	76	30. 5	-3,29	West	56
11. —	+0,10	—	41	12. 2	-3,37	—	70	Oct. 13. 2	-1,03	East	49
24. 22	+0,22	—	38	19. 2	-4,20	—	69	19. 2	-1,13	—	53
Mar. 8. 22	+0,26	—	45	26. 2	-3,48	—	70	Nov. 1. 22	+0,10	—	56
17. 2	+1,03	—	41	Aug. 3. 2	-4,38	—	67	4. 22	-0,36	—	53
17. 3	+1,30	—	43	12. 2	-4,59	—	60	5. 23	-3,48	West	51
22. 1	+0,20	—	50	14. 4	-5,01	—	62	5. 23	-3,16	—	51
Apr. 1. 0	+1,01	—	46	14. 6	-4,95	—	61	8. —	-3,81	—	61
7. 21	+0,83	—	47	23. 2	-3,64	—	64	15. —	-3,09	—	52
7. 22	+0,69	—	50	Sept. 2. 2	-3,93	—	65	24. 2	-3,04	—	46
12. 2	+1,22	—	49	8. 2	-3,67	—	65	29. 22	-4,59	—	—
19. 23	+0,40	—	45	15. 2	-4,93	—	56	Dec. 6. 2	-4,71	—	52
28. 2	-0,07	—	52	17. 2	-4,32	—	55	15. 21	-4,52	—	45
May 5. 2	-0,26	—	51	18. 5	-4,98	—	58	20. 22	-4,33	—	47
10. 2	-0,56	—	58	20. 3	-0,78	East	53	29. 1	-4,25	—	46
20. 2	-0,90	—	58	22. 2	-1,14	—	55				
June 2. 2	-0,82	—	—	24. 2	-0,80	—	59				

The above Level Errors have been corrected by  $+0'',07$  when the Illumination is West and by  $+0'',03$  when the Illumination is East, and the results to the nearest tenth of a second are the values adopted in the reduction of the transits. For the reason stated in p. v. only the halves of these small corrections should have been applied.

In all the levellings the Telescope was horizontal and the object-glass southward, with the exception of the first on Nov. 5, in which instance the Telescope was horizontal and the object-glass northward. The Level Error for this position is not used.

The Level Error used from March 13, is the mean of the two obtained on March 17. On March 22 a warm south wind caused rapid changes of the bubble, on which account the readings for the two ends were taken with as little interval as possible between. The levellings of April 7 were taken before and after the determination of Collimation Error, and the mean of the two results is used both for calculating the Collimation Error and for the reduction of the observations of April 8 and 10. On June 22 the wind was blowing violently during the time of the levelling. Between the levellings of August 14 the instrument was lifted from the Ys to clean the pivots. The two results differ little from each other, and their mean is used from Aug 13. The levelling of Sept. 2 was 'unsatisfactory.' On Sept. 17 the levelling was performed with unusual care, the Level having been uncovered for more than an hour, and long intervals being allowed for the bubble to settle after each inversion. For this reason the result is made use of for the calculation of collimation error and the reduction of the observations in preference to that of Sept. 18, which was obtained under very unfavourable circumstances. No levelling was taken between Oct. 19 and

Nov. 1 in consequence of indisposition of the observer. The second and third levellings of Sept. 24, and that of Sept. 30, were not required for use; and the levelling of Nov. 24 has not been used because the readings were discordant, and the level error was obtained by correcting them conjecturally.

The corrections for the apparent inequality of the radii of the pivots, calculated in the manner explained in Vol. X. p. xxviii. are  $-0''.78$  from the levelling of Sept. 17 compared with those of Sept. 20 and 22,  $-0''.62$  and  $-0''.79$  from the three levellings of Sept. 24,  $-0''.56$  from the levellings of Sept. 29–30, and  $-0''.65$  from those of Nov. 5. These quantities are in general larger than those of 1849–1851. The increase I consider to be due to the wear of the pivots at the points of application of the feet of the Level, and not to a change in the relative size of the pivots. See p. lvii. of Vol. XVIII.

The correction applied to the observed time of each transit, previously corrected for error of collimation, is

$$\frac{1}{15} \times \text{level error} \times \cosine \text{ of Zen. Dist. } \times \text{cosec. of N.P.D.,}$$

the N.P.D. being negative when the star is below the pole.

*Azimuth Error.*—The angle by which the plane of motion of the true line of collimation (supposing the level error corrected) deviates from the plane of the meridian, has been found either by two or more transits of Polaris, or  $\delta$  Ursæ Minoris, alternately above and below the pole, and as often as possible, consecutive, or, when this method could not be employed, by the comparison of a single transit of one of these stars with the transit of a known star above and distant from the pole.

The formulæ of calculation applicable to these methods are obtained as follows. Let  $A, A'$  be the apparent right ascensions of two known stars,  $t, t'$  their times of transit as shewn by the clock, corrected for collimation and level errors,  $\tau$  the clock's loss in the interval between the transits,  $h, h'$  the coefficients of azimuth error, calculated by the formula, coefficient  $= \frac{1}{15} \sin. \text{ Zen. Dist. } \times \text{cosec. N.P.D.,}$  and therefore positive except between the zenith and the pole, and  $z$  the azimuth error in seconds of space, considered positive when it causes the plane of motion of the line of collimation to deviate on the South side of the Zenith towards the East. Then

$$A' - A = t' + h'z + \tau - (t + hz),$$

$$\text{or } z = \frac{A' - A - (t' - t) - \tau}{h' - h},$$

which is the general formula for azimuth error. That it may be safely used, the denominator  $h' - h$  must be large, and it is consequently necessary that one at least of the stars should be near the pole.

When two known stars, one or both near the pole, are employed,  $A' - A$  is the difference of their assumed apparent R.A., and  $\tau$  is inferred from the differences of the uncorrected times of transit of any southern star observed on two days near the time of the observations made use of for azimuth error.

If two observations of the same polar star be used, one above and the other below the pole, and if  $\epsilon$  be the increase of its R.A. in the interval between the observations,  $A' - A = 12^h + \epsilon$ , and

$$z = \frac{12^h + \epsilon - (t' - t) - \tau}{h' - h},$$

which is independent of any assumed R.A. of the star.

When three equidistant transits of a polar star, alternately above and below the pole, have been obtained, there will be another equation like the preceding, in which  $\epsilon$  and  $\tau$



have nearly the same values; and if  $t''$  be the time of the third transit, corrected for errors of collimation and level, the two equations give

$$z = \frac{(t'' - t') - (t' - t)}{2(h' - h)},$$

which equation is independent both of the R.A. of the stars, and of their change of R.A. and the clock's rate.

The numerical computation from the preceding formulæ is performed as follows, the azimuth error being always a small quantity. The seconds of transit of the stars being first corrected for collimation and level errors, when two stars are used, the seconds of transit of the second are further corrected for the loss of the clock in the interval between the transits. From the seconds thus corrected the seconds of the sidereal interval between the transits, affected only by azimuthal error, are deduced. The seconds of the same interval are then inferred from the seconds of the assumed R.A. of the stars. The algebraic excess of the latter difference above the former (care being taken to add or subtract  $60''$  that the excess may not contain a large number of seconds) is the azimuthal correction of the interval between the transits. This quantity divided by  $h' - h$ , the algebraic excess of the coefficient of azimuth error for the second star above that for the first, gives the azimuth error with its proper sign. The process is the same in the case of two transits of a polar star, one above and the other below the pole, the change of the star's R.A. in the interval being taken into account.

When there are three consecutive transits of a polar star, the change of the star's R.A. and the clock's rate are not considered, and the adopted azimuth error is the mean of the two results which would be obtained by the above rule from the first and second, and from the second and third. If more than three consecutive transits be observed, a value of the azimuth error is deduced from the first, second, and third; another from the second, third, and fourth; and so on. If the different values are nearly equal, the mean of all would be used; otherwise they would be used separately or in groups.

The following Table contains a list of the Azimuth Errors in 1852, with the data employed in calculating them, by means of which they may be readily verified.

*Calculation of Azimuth Errors in 1852.*

Approximate Mean Time of observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h' - h$ .	Azimuth Error.	Remarks.
Jan. 29. 8 29. 10 29. 10	Aldebaran δ Ursæ Min. SP. Sirius	7,75 27,83 19,83	 + 0,13 + 0,02	25,89 50,54 38,19	+ 4,44 - 4,37	+ 0,699 - 0,675	+ 6,35 + 6,44	The mean of the two values is used from the beginning of the year.
Feb. 11. 9 11. 11	δ Ursæ Min. SP. ε Hydræ	10,51 18,58	+ 0,15	53,30 56,80	- 4,72	- 0,692	+ 6,82	
Mar. 5. 7 5. 7	δ Ursæ Min. SP. Sirius	36,78 20,03	+ 0,03	0,04 37,75	- 5,54	- 0,675	+ 8,21	
12. 7 12. 7	δ Ursæ Min. SP. Sirius	25,57 6,43	+ 0,03	2,55 37,62	- 5,82	- 0,675	+ 8,62	

Approximate Mean Time of observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h'-h$ .	Azimuth Error.	Remarks.
Mar. 23. 1 23. 13	Polaris Polaris SP.	6.17 47.12	+ 0,86	51.43 51.37	+ 18,13	+ 3,168	+ 5,72	
Apr. 10. 12 10. 12	Polaris SP. Spica	10,35 56,82	+ 0,02	50,89 25,17	- 12,21	- 1,577	+ 7,74	Not used, the next being preferred.
12. 0 12. 12 13. 0	Polaris Polaris SP. Polaris	32,62 5,35 25,01			+ 27,27 - 19,66	+ 3,168 - 3,168	+ 8,61 + 6,21	The mean, viz. + 7",41 is used from Mar. 29.
20. 22 20. 23	$\alpha$ Andromedæ Polaris	58,13 18,13	+ 0,08	43,44 52,50	- 11,02	- 1,562	+ 7,06	The mean of these two is used from Apr. 19.
23. 23 24. 3	Polaris $\alpha$ Orionis	14,26 18,14	+ 0,32	53,58 8,64	+ 10,86	+ 1,578	+ 6,88	
25. 23 26. 11	Polaris Polaris SP.	11,54 49,55	+ 0,74	54,18 54,32	+ 21,39	+ 3,168	+ 6,75	
May 4. 10 6. 22	Polaris SP. Polaris	38,00 56,18	+ 4,15	57,28 58,63	- 18,14	- 3,168	+ 6,62	
14. 21 15. 9	Polaris Polaris SP.	50,08 31,34	+ 0,71	2,29 2,58	+ 18,32	+ 3,168	+ 5,78	
June 4. 8 4. 9	Polaris SP. Arcturus	15,47 3,57	+ 0,07	16,28 55,93	- 8,52	- 1,599	+ 5,33	
17. 7 17. 8	Polaris SP. Arcturus	7,96 44,45	+ 0,06	26,34 55,85	- 7,04	- 1,599	+ 4,40	
July 2. 11 2. 11	$\alpha$ Ophiuchi $\delta$ Ursæ Minoris	33,99 54,77	+ 0,05	5,79 24,24	- 2,38	- 0,679	+ 3,51	The mean of these two is used from June 26.
5. 6 5. 7	Polaris SP. Arcturus	0,10 20,33	+ 0,06	40,82 55,67	- 5,44	- 1,599	+ 3,40	
12. 6 12. 6	Polaris SP. Spica	59,73 44,59	0,00	46,71 24,79	- 6,78	- 1,577	+ 4,30	
19. 5 19. 7	Polaris SP. $\alpha^*$ Libræ	59,76 57,18	+ 0,05	52,29 43,09	- 6,67	- 1,573	+ 4,25	
Aug. 4. 9 4. 9	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	58,19 22,12	+ 0,01	56,89 17,50	- 3,33	- 0,703	+ 4,74	The mean between this and the next value is used from July 28.
9. 4 9. 5	Polaris SP*. Arcturus	58,54 52,54	+ 0,04	8,22 55,20	- 7,06	- 1,599	+ 4,42	
26. 8 26. 8	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	33,69 50,30	+ 0,01	56,67 10,01	- 3,28	- 0,703	+ 4,67	
Sept. 2. 2 2. 3	Polaris SP. Arcturus	40,64 22,66	+ 0,07	22,28 54,87	- 9,50	- 1,599	+ 5,94	The mean of these two is used from Aug. 30.
3. 7 3. 7	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	22,76 34,72	+ 0,01	56,54 7,06	- 1,45	- 0,703	+ 2,06	
13. 14 14. 2	Polaris Polaris SP*.	44,69 33,74	+ 0,62	27,23 27,38	+ 10,48	+ 3,168	+ 3,38	* Equal weights are given to the observations with and without the micrometer. So also on Sept. 16, 17, and 21.
16. 13 17. 1 17. 13	Polaris* Polaris SP*. Polaris	42,69 29,38 40,36			+ 13,31 - 10,98	+ 3,168 - 3,168	+ 4,20 + 3,47	The mean between these is used from Sept. 16.
20. 13 22. 1	Polaris Polaris SP.	36,06 29,23	+ 1,78	29,99 30,38	+ 5,44	+ 3,168	+ 1,72	The mean of these two is used from Sept. 20, on which day the Transit was reversed.
21. 13 22. 1	Polaris* Polaris SP.	35,78 29,23	+ 0,59	30,26 30,38	+ 6,08	+ 3,168	+ 1,92	



Approximate Mean Time of observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h'-h$ .	Azimuth Error.	Remarks.
Sept. 29. 0 29. 12	Polaris SP†. Polaris†	25,65 27,93	+.078	31,58 31,69	- 2,95	- 3,168	+ 0,93	† Weights are given to the transits with and without the micrometer in proportion to the number of wires.
29. 12 Oct. 1. 0	Polaris† Polaris SP.	27,93 22,02	+ 2,34	31,69 32,07	+ 3,95	+ 3,168	+ 1,25	The mean of this and the preceding value is used from Sept. 25.
17. 23 18. 1	Polaris SP. Arcturus	58,60 17,89	+ 0,07	33,32 54,57	+ 1,89	- 1,599	- 1,18	The mean of these is used from Oct. 11.
19. 23 20. 0	Polaris SP. Arcturus	52,68 14,69	+ 0,07	33,11 54,58	- 0,61	- 1,599	+ 0,38	
Nov. 2. 10 2. 22 3. 10 3. 22	Polaris Polaris SP. Polaris Polaris SP*.	31,76 27,18 32,30 23,58			+ 4,58 - 5,12 + 8,72	+ 3,168 - 3,168 + 3,168	+ 1,45 + 1,62 + 2,75	The mean of the three results is used from Oct. 30. * Weights are given to the observations with and without the micrometer proportional to the number of wires. So also on Nov. 5.
5. 22 8. 7	Polaris SP*. α Aquarii	11,25 1,83	+ 3,30	29,61 12,63	- 10,86	- 1,584	+ 6,86	The Transit was reversed Nov. 5, 9 <sup>h</sup> .
16. 13 16. 21	Aldebaran Polaris SP.	6,00 52,76	+ 0,58	29,10 25,68	+ 9,24	- 1,596	+ 5,79	
27. 8 27. 8	β Ceti Polaris	30,96 48,22	+ 0,04	11,91 20,42	- 8,79	- 1,598	+ 5,50	
Dec. 8. 22 9. 1	α Serpentis δ Ursæ Minoris	58,68 34,58	+ 0,18	59,34 31,50	- 3,92	- 0,683	+ 5,74	
16. 0 16. 1	α Ophiuchi δ Ursæ Minoris	52,69 24,78	+ 0,06	4,31 30,20	- 6,26	- 0,679	+ 9,22	The mean between this and the next is used from Dec. 10 to the end of the year.
17. 19 20. 7	Polaris SP*. Polaris*	33,50 61,05	+ 4,43	6,33 4,42	- 33,89	- 3,168	+ 10,70	* Equal weights given to the observations with and without the micrometer.

The assumed apparent R.A. employed in the above calculations are the R.A. of the Nautical Almanac, corrected by the small quantities mentioned under the head of Clock Error.

The Azimuth Errors adopted in the reduction of the transits are the above values taken to the nearest tenth of a second, and are placed in the *thirteenth column*, with bars across to indicate the interval during which each value is used. The correction applied to each transit for azimuth error is, in seconds of time,

$$\frac{1}{15} \times \text{azimuth error} \times \sin. \text{ of Zen. Dist. } \times \text{cosec. N.P.D.,}$$

the zenith distance being negative to the north of the zenith, and the polar distance negative to the north of the Pole.

The seconds of transit of each object, corrected for the errors of collimation, level, and azimuth, are arranged in the *fourteenth column*. If the three errors be called respectively  $a$ ,  $b$ ,  $c$ , and if  $\delta$  be the north polar distance of the object, and  $\approx$  the zenith distance south, that is, the algebraic excess of  $\delta$  above  $37^{\circ}.47'.8''$ , the co-latitude of the Observatory, then the sum of the three corrections is

$$a \cdot \frac{1}{15 \sin \delta} + b \cdot \frac{\cos \approx}{15 \sin \delta} + c \cdot \frac{\sin \approx}{15 \sin \delta}.$$

The computation of this quantity has been generally performed by means of a machine constructed by Mr Simms under my direction, a description of which is given in the Monthly Notices of the Royal Astronomical Society, Vol. x. p. 182. The machine cal-



culates at once the above quantity when  $a$ ,  $b$ ,  $c$ , and  $\delta$  are given, and saves the trouble of writing down the coefficients of  $a$ ,  $b$ , and  $c$ . The result it gives is accurate to the hundredth of a second, if the star be not very near the pole. It has not been used in the reductions of the observations of Polaris and  $\delta$  Ursæ Minoris, nor in the calculation of azimuth error. In these instances Table II. at the end of this Introduction has been employed. Table I, though not used, is added to facilitate the verification of the calculations.

*Clock-Error.*—The errors of the Clock are the excesses of the assumed apparent right ascensions of the stars which have been selected for the determination of true sidereal time above the clock-times of meridian transit. The assumed Mean Right Ascensions, Jan. 1, 1852, of these fundamental stars are given in the subjoined Table, in which Polaris and  $\delta$  Ursæ Minoris are included, because their apparent right ascensions are employed for finding the azimuth error.

Star.	Assumed Mean R.A. Jan. 1, 1852.	Excess above the R.A. of Naut. Alm.	Star.	Assumed Mean R.A. Jan. 1, 1852.	Excess above the R.A. of Naut. Alm.
$\alpha$ Andromedæ..	<i>h. m. s.</i> 0. 0. 44,77	+ 0,07	Arcturus.....	<i>h. m. s.</i> 14. 8. 54,76	+ 0,09
$\beta$ Ceti.....	0. 36. 9,53	+ 0,14	$\epsilon$ Bootis.....	14. 38. 31,40	+ 0,04
Polaris.....	1. 5. 37,09	+ 0,97	$\alpha^s$ Libræ.....	14. 42. 41,95	+ 0,07
$\alpha$ Arietis.....	1. 58. 50,42	+ 0,12	$\alpha$ Coronæ Bor..	15. 28. 25,37	+ 0,08
$\alpha$ Ceti.....	2. 54. 32,87	+ 0,04	$\alpha$ Serpentis....	15. 36. 58,85	+ 0,07
Aldebaran.....	4. 27. 25,98	+ 0,04	$\delta$ Ophiuchi....	16. 6. 35,65	+ 0,10
Rigel.....	5. 7. 25,63	+ 0,06	Antares.....	16. 20. 20,44	+ 0,09
$\beta$ Tauri.....	5. 16. 56,41	+ 0,07	$\alpha$ Herculis.....	17. 7. 54,08	+ 0,13
$\alpha$ Orionis.....	5. 47. 9,63	+ 0,03	$\alpha$ Ophiuchi....	17. 28. 4,00	+ 0,14
Sirius.....	6. 38. 37,59	- 0,04	$\mu^1$ Sagittarii....	18. 4. 54,82	+ 0,12
Castor.....	7. 25. 9,05	+ 0,08	$\delta$ Ursæ Minoris.	18. 20. 4,62	- 0,43
Procyon.....	7. 31. 33,23	+ 0,20	$\beta$ Lyræ.....	18. 44. 36,96	+ 0,07
Pollux.....	7. 36. 15,19	+ 0,03	$\zeta$ Aquilæ.....	18. 58. 36,53	+ 0,15
$\epsilon$ Hydræ.....	8. 38. 56,17	+ 0,02	$\gamma$ Aquilæ.....	19. 39. 13,44	+ 0,10
$\alpha$ Hydræ.....	9. 20. 18,90	+ 0,12	$\alpha$ Aquilæ.....	19. 43. 33,73	+ 0,08
Regulus.....	10. 0. 29,15	+ 0,04	$\beta$ Aquilæ.....	19. 48. 2,62	+ 0,10
$\delta$ Leonis.....	11. 6. 13,93	+ 0,09	$\alpha^s$ Capricorni...	20. 9. 50,41	+ 0,14
$\beta$ Leonis.....	11. 41. 30,50	+ 0,11	$\beta$ Aquarii.....	21. 23. 45,96	+ 0,13
$\beta$ Corvi.....	12. 26. 37,33	+ 0,20	$\alpha$ Aquarii.....	21. 58. 10,90	+ 0,14
Spica.....	13. 17. 24,12	+ 0,09	$\alpha$ Pegasi.....	22. 57. 23,51	+ 0,07

The assumed Mean Right Ascensions were obtained by adding the annual variations to the Mean Right Ascensions, Jan 1, 1851, concluded from the observations of 1851, whenever the number of observations from which the R.A. of any star was concluded was not less than twenty. In other cases, if  $A$  be the assumed R.A. of 1851, and if  $A'$  be the R.A. resulting from a number ( $n$ ) of observations in that year less than 20, the assumed R.A. of 1852 is  $A + (A' - A) \frac{n}{20}$  increased by the annual variation. The mean excess of the assumed R.A. of the fundamental stars above the R.A. of the Nautical Almanac is + 0<sup>s</sup>,090, which agrees exactly with the result of the observations of 1851.

To form the assumed apparent R.A. used for the determination of the azimuth error and the error of the clock, the excesses above the Nautical Almanac in the foregoing table are added to the apparent R.A. of that work. It will be seen that the corrections which are thus adopted for aberration, precession, and nutation, are the same as those of the Nautical Almanac, which assume the constant of aberration to be 20",42, and that of lunar nutation to be 9",25. The assumed apparent R.A. of Polaris and  $\delta$  Ursæ Minoris take account of the additional corrections, depending on the Moon's longitude, which are given in pages 478. and 479 of the Nautical Almanac for 1852. In all cases in which the



stars are used for the determination of azimuth error, the seconds of the assumed R.A. are inserted in the Table of azimuth errors already given in this Introduction.

The clock-errors in the *fifteenth column* are the excesses of the assumed apparent right ascensions of the fundamental stars above the times of meridian transit. The times of putting forward the minute-hand of the clock are stated in the space immediately below the columns.

The notice of putting forward the clock at noon of Dec. 10 was inadvertently omitted. No reason was assigned for stopping the clock on April 2, when the minute-hand was put forward 2<sup>m</sup> by Mr Todd. Occasionally seconds were lost, and the rate in some degree altered, by adjusting the minute-hand, but care was taken that the observations should not thereby be affected.

For the purpose of calculating the correction to be applied to each observation for error of the clock, the observations are divided into groups, severally containing stars proper for giving clock-errors. These groups, the limits of which are marked by bars across the column of clock-errors, are separated by intervals during which no observations have been taken, and which, as often as possible, belong to consecutive nights. The mean of the clock-errors in each group is considered to apply to the mean of the times of transit of the stars which furnish them. The comparison of this mean error with errors similarly derived from the next preceding and following groups, gives a preceding and a following rate; whence a rate is inferred, which is assumed to hold uniformly throughout the middle group. No definite rule can be given for inferring the adopted rate: attention is paid to the probable relative accuracy of the rates on which it depends, and also to the proportion of the intervals separating the preceding and following mean clock-errors from the intermediate one. The rule which is generally adopted is expressed algebraically as follows. Let  $r$  be the clock's rate, as inferred from the first and second groups, at an epoch preceding by  $\tau$  the mean epoch of the clock-errors of the second group, and let  $r'$  be the rate, as inferred from the second and third groups, at an epoch following by  $\tau'$  the mean epoch of the clock-errors of the second and third groups. Then the rate adopted for the second group is

$$\frac{r\tau' + r'\tau}{\tau + \tau'}.$$

Those clock-errors which are included in brackets are not used for determining the clock's rate.

When in the same group there are observations by two observers giving clock-errors, mean errors are deduced from the two sets, and are used in the reduction of the observations of the respective observers. But the clock's rate is inferred from comparisons of clock-errors of the same observer. Thus the resulting R.A. may be considered to be unaffected by personal equation, and the differences of the mean clock-errors, reduced to the same epoch, are data for calculating the difference of the personal equations of the two observers. Differences of personal equation are taken into account when the clock's rate is inferred from the observations of two observers on different days.

The difference of the personal equations of myself (C) and Mr Breen (B) was calculated as follows, the means of the two sets of clock-errors being reduced to the same epoch by rates derived from the clock-errors of one observer.

Day of Observation, 1852.		Clock slow by B.	Number of B's Observations.		Clock slow by C.	Number of C's Observations.	Excess of Clock's loss by B.	Assumed Weight.
July 1	.....	29,28	..... 3	.....	29,22	..... 4	..... + 0,06	..... 7
5	.....	34,70	..... 4	.....	34,51	..... 8	..... + 0,19	..... 10
6—7	...	36,65	..... 4	.....	36,32	..... 6	..... + 0,31	..... 2
9	.....	37,65	..... 4	.....	37,63	..... 2	..... + 0,01	..... 1
Dec. 31	.....	35,28	..... 3	.....	35,03	..... 1	..... + 0,25	..... 1

Small weights are given to the results from the observations of July 6—7, July 9, and Dec. 31, because the two sets were not sufficiently contemporaneous. Taking account of the assumed weights, the mean excess of B's clock-error is + 0<sup>s</sup>.15; that is, B observes *earlier* than C by this interval.



The only data for calculating the difference of the personal equations of myself and Mr Todd (T) are the following:

Day of Observation, 1852.	Clock slow by T.	Number of T's Observations.	Clock slow by C.	Number of C's Observations.	Excess of Clock's loss by T.	Assumed Weight.
July 26 .....	50,32	3	50,40	3	- 0,08	6
Aug. 3—4 .....	57,95	2	57,91	6	+ 0,04	3

On Aug. 3—4 the two sets of observations were too far apart. The mean result, according to the assumed weights, is  $-0^s,04$ ; that is, T observes *later* than C by  $0^s,04$ . Hence, as B observes earlier than C by  $0^s,15$ , it follows that B observes *earlier* than T by  $0^s,19$ . The only instance of the application of a correction for difference of personal equation is that of Jan. 31. T's observation on Feb. 26 is grouped with his observations on Feb. 27; and C's observations on Dec. 23 are grouped with those of T on Dec. 21, without applying any correction for difference of personal equation.

The difference of the personal equations of Mr Simmonds (S) and B, were inferred from nearly contemporaneous transits of clock-stars as follows:

Day of Observation, 1852.	Clock slow by B.	Number of B's Observations.	Clock slow by S.	Number of S's Observations.	Excess of Clock's loss by B.	Assumed Weight.
Sept. 25 .....	61,27	2	61,24	1	+ 0,03	6
29 .....	66,92	3	66,89	1	+ 0,03	7
30 .....	68,49	1	68,24	1	+ 0,25	4
Oct. 1 .....	69,78	1	69,89	4	- 0,11	8

The mean excess of B's clock-error is accordingly  $0^s,02$ . As this is a very small quantity and somewhat uncertain, no corrections have been applied for the difference of the personal equations of B and S.

The adopted rate, determined in the manner above stated, is placed in the *sixteenth column*, with bars across to mark the limits within which it is used. These limits generally coincide with the limits of the groups of observations; but occasionally, as on March 29 and 30, it was thought right to change the rate within the limits of the group.

The Apparent Right Ascensions from observation, given in the *seventeenth column*, are deduced as follows from the clock-times of meridian transit. The adopted rate is employed, first, in calculating from the mean clock-error of the group to which it applies, the correction for clock-error at each  $0^h$  of sidereal time which occurs within the limits of the group, and then in finding the additional correction for the interval between each transit and the next preceding  $0^h$ . The result of adding the sum of these corrections to the time of meridian transit is the apparent R.A. concluded from the observation. The apparent R.A. of the fundamental stars, if fewer than three are contained in the same group, and the apparent R.A. of Polaris and  $\delta$  Ursæ Minoris, if the azimuth error is not determined by two or more transits of one of these stars, are not inserted in the column of apparent R.A.

The *eighteenth column* contains the initial of the observer's name, the letters C, B, T, and S, indicating respectively observations taken by myself, Mr Breen, Mr Todd, and Mr Simmonds.

The notes in the space at the bottom of the page consist of incidental and explanatory remarks, and such as may serve to identify the stars. To give an opportunity of judging of the weight due to individual observations, it was thought right to admit the mention of no circumstance which seemed likely in any way to affect the result of an observation.

II. *Mean Right Ascensions of the Fundamental Stars, and Mean Right Ascensions of the other Stars, as deduced from the separate observations, and concluded Mean Right Ascensions of all the Stars observed in 1852, with the Annual Variations.* Pages 41—57.

The results of the separate transits of the Fundamental Stars are arranged by themselves (in pages 42—45), because each star is generally observed a large number of times in the course of the year.

The columns in pages 48—57 contain the names of the stars arranged in order of right ascension, the days on which each star not fundamental was observed, the corrections (for aberration, precession, and nutation) which have been added algebraically to the apparent Right Ascensions extracted from the columns of 'Apparent R.A. from observation,' in pages 2—39, the resulting mean Right Ascensions, Jan. 1, 1852, and the Annual Variations. The corrections and annual variations are calculated as follows.

For stars whose apparent Right Ascensions are given in the Nautical Almanac, the corrections are obtained by subtracting the apparent from the mean Right Ascensions of that work, after applying to the former in the instances of Polaris, and  $\delta$  Ursæ Minoris, the small corrections in pages 478 and 479. For a star in the Catalogue of the British Association, and not included in the list of the Nautical Almanac, the correction ( $\delta a$ ) is calculated by the formula,

$$-\delta a = Aa + Bb + Cc + Dd,$$

$\log A$ ,  $\log B$ ,  $\log C$ , and  $\log D$  being taken without alteration from the Nautical Almanac, and  $\log a$ ,  $\log b$ ,  $\log c$ ,  $\log d$ , from that Catalogue. The formula employed for all other stars is,

$$\begin{aligned} -\delta a = & \frac{A}{15} \cos \text{R.A.} \operatorname{cosec} \text{N.P.D.} + \frac{B}{15} \sin \text{R.A.} \operatorname{cosec} \text{N.P.D.} + C \times [0,4872] \\ & + \frac{C}{15} \times [1,3022] \times \sin \text{R.A.} \cotan \text{N.P.D.} + \frac{D}{15} \cos \text{R.A.} \cotan \text{N.P.D.} \end{aligned}$$

The Annual Variations have *all* been calculated by the formula,

$$\text{Annual Variation in R.A.} = 3',0706 + [0,12612] \sin \text{R.A.} \cotan \text{N.P.D.}$$

The constants in this formula, as in that for the corrections, have been derived from the data in page x. of the *Tabulæ Regiomontanæ*.

In the case of double stars, it is presumed that the rule given in p. i. has been followed by the observer. In a few instances the letters *np*, *nf*, *sp*, *sf*, have been affixed in their usual significations.

The magnitudes under the head of 'Observed Mag.' are only such as were recorded by the observer. In several instances the estimations appear to have been affected by atmospheric circumstances.

The 'Notes' in the last column contain incidental remarks, chiefly relating to the identifying of the stars and estimations of magnitudes, and to the rectification of errors in Catalogues.

### III. *Apparent North Polar Distances observed with the Mural Circle.*

The particulars of observations with the Mural Circle, and the data for calculating the apparent North Polar Distances, are contained in pages 60—89. The following is the explanation of the contents of the separate columns.

The *first column* has the day of observation, commencing always with the Sun's passage.

The *second column* contains the name of the object observed. The letter *R* following the name, denotes that the object was observed by reflection in a trough of mercury. The stars are named according to the rules adopted with respect to the Transit observations. Anonymous stars are designated by their approximate mean right ascensions.



The order of the six microscopes, beginning with *A*, which is at the northern extremity of the horizontal diameter of the circle, and proceeding over the highest part of the limb, is *ACEBDF*, so that *A* and *B*, *C* and *D*, *E* and *F*, are severally at the ends of a diameter. The order of the graduation is from South to North through the highest point of the circle. All micrometer readings increase as the micrometer-wires move *towards* the graduated micrometer-heads. The microscopes have their micrometer-heads all directed the same way relatively to the graduation of the circle: that of *A* is *downwards*. When the Telescope is horizontal and its object-glass looks southward, the micrometer-head of the eye-piece micrometer is also downwards.

The *six succeeding columns* contain the readings of the six microscopes. The divisions of the graduation of the circle are 5' apart. The minutes, which are set down in the first of these columns, are indicated by the number of indents of the comb of the microscope in the interval between the division bisected by the micrometer-wire and the hole of the comb; and the seconds and fraction of a second are taken from the micrometer-heads. The bisected division is that next to the hole, on the *same* side, as seen in an inverting microscope, as the micrometer-head, except in some instances mentioned hereafter.

The microscope readings taken in the manner just stated, are effected with an error of *Runs*, unless the micrometer-wire is carried by five turns of the micrometer exactly from the image of one division to that of the next, which very rarely happens to be the case. The corrections applied on this account, are obtained in the following manner. The Circle being clamped in such a position that a division is near the zero of the microscope, this division and the adjacent one towards the micrometer-head are bisected. The excess of the micrometer reading, for the former, which is called the *preceding* division, above the micrometer reading for the other, which is called the *following* division, is the quantity to be added to a microscope reading of 5' to correct for the error in question. For a less reading the correction is proportionally less. Instead of correcting for each microscope reading separately, it is sufficiently accurate and more expeditious to add the excesses of the six microscopes together, to take a part of the sum bearing the same ratio to the whole as the approximate mean microscope reading to 5', and then adding up this part with the six microscope readings, to divide the sum by 6 to obtain the corrected mean reading. The sum of the excesses is the 'Correction for Runs for 5' inserted in the *ninth column*, with bars across to indicate the interval during which each value is used.

It sometimes happens in reading the microscopes, that a division, falling near the hole of the comb, is bisected when on the negative side of zero. In such cases the minutes of the microscope readings are put down for the sake of uniformity as if the division on the positive side had been bisected, and a negative correction, proportional to the difference between 5' and the mean microscope reading, is applied for Runs. When this circumstance occurs it is mentioned in the notes.

The following Table exhibits the results of the observations made in 1849 for the Error of Runs of the six microscopes. The temperature in degrees of Fahrenheit, whenever it was noted, is included, because the changes in the amount of Runs appear to depend in great measure on changes of temperature.



*Observations of Runs in 1852.*

Time of Observation, 1852.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.	Time of Observation, 1852.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.
	A	B	C	D	E	F				A	B	C	D	E	F		
Jan. 20. 4	+2,1	+4,7	-2,2	+1,0	+1,8	+2,7	+10,1	47	July 13. 6	+0,3	+2,9	-2,6	+1,3	+0,6	+3,1	+5,6	68
28. 2	+2,3	+4,9	-2,6	-0,3	+2,3	+2,9	+9,5	42	19. 2	+0,4	+3,1	-3,0	+1,9	+0,4	+1,2	+4,0	69
28. 2	+1,7	+4,8	-2,2	+1,5	+2,1	+3,1	+11,0		19. 2	+0,4	+3,3	-2,7	+1,8	+1,1	+3,0	+6,9	
Feb. 8. 22	+2,3	+5,9	-2,6	+1,3	+2,5	+2,8	+12,2	44	Aug. 2. 2	+0,3	+3,6	-3,4	+0,6	+0,8	+1,7	+3,6	70
8. 22	+1,5	+4,7	-3,1	+0,1	+2,2	+3,2	+8,6		10. 2	+1,9	+3,6	-3,0	+1,9	+0,8	+1,9	+7,1	64
8. 22	+1,6	+4,5	-2,3	+0,2	+1,1	+2,2	+7,3		17. 22	+0,5	+3,3	-2,5	+2,0	+0,1	+1,9	+5,3	64
17. 22	+2,2	+3,5	-2,7	-0,2	+1,3	+3,0	+7,3	44	18. 4	+0,5	+3,2	-2,9	+1,1	+2,8	+3,3	+8,0	
17. 22	+3,0	+4,0	-2,7	+0,9	+2,4	+4,2	+11,8		25. 7	+1,4	+3,7	-2,9	+2,4	+1,6	+2,3	+8,5	64
24. 22	+2,1	+3,5	-2,4	+1,4	+2,4	+3,1	+10,1	38	Sept. 1. 0	+2,1	+3,5	-3,2	+1,9	+1,3	+2,4	+8,0	62
24. 22	+2,1	+4,0	-2,5	+0,8	+2,1	+3,6	+10,1		1. 0	+0,3	+3,4	-2,9	+2,0	+0,8	+3,1	+6,7	
Mar. 4. 4	+2,1	+4,9	-2,4	+1,6	+1,9	+3,6	+11,7	37	10. 10	+2,2	+3,6	-2,5	+2,7	-0,6	+2,5	+7,9	62
4. 4	+2,2	+4,0	-2,8	+0,7	+1,5	+4,4	+10,0		10. 10	0,0	+3,5	-3,1	+1,9	+1,8	+2,3	+6,4	
12. 12	+1,9	+4,4	-2,5	+1,1	+2,1	+3,0	+10,0	43	16. 6	+1,5	+3,7	-3,2	+2,9	+0,6	+5,9	+11,4	
12. 12	+1,0	+3,4	-1,4	+1,2	+1,9	+3,7	+9,8		17. 7	+1,1	+4,2	-3,2	+0,9	+1,3	+1,9	+6,2	
14. 22	+1,0	+4,4	-2,4	+0,9	+1,7	+3,6	+9,2	40	17. 7	+0,8	+4,2	-1,5	+0,5	+1,4	+4,2	+9,6	
14. 22	+0,9	+4,7	-2,0	+1,0	+1,7	+4,0	+10,3		19. 21	+1,8	+3,4	-2,4	+1,6	+1,2	+4,5	+10,1	50
22. 7	+1,3	+4,4	-2,1	+0,6	+1,8	+3,1	+9,1	50	27. 2	+0,7	+4,0	-2,0	+1,3	+0,2	+2,7	+6,9	58
22. 7	+1,9	+3,9	-1,8	-0,6	+2,6	+3,8	+9,8		Oct. 27. 2	+0,3	+3,6	-2,2	+2,0	+1,4	+2,6	+7,7	
29. 3	+1,8	+4,4	-2,3	+1,8	+2,2	+2,8	+10,7	46	4. 2	0,0	+4,1	-3,5	+1,5	-0,1	+3,5	+5,5	53
29. 3	+1,3	+3,4	-2,1	+1,9	+2,2	+2,6	+9,3		4. 2	-0,2	+4,1	-2,2	+2,0	+1,1	+2,6	+7,4	
Apr. 5. 6	+1,7	+3,8	-2,7	+0,7	+1,1	+2,8	+7,4	45	11. 9	-0,1	+4,1	-2,5	+2,0	+1,4	+2,2	+7,1	51
5. 6	+2,2	+3,5	-2,1	-0,8	+2,0	+3,3	+8,1		11. 9	+0,4	+4,4	-2,8	+1,4	+1,8	+2,9	+8,1	
14. 7	+1,3	+4,7	-2,4	+0,1	+1,5	+2,8	+8,0	55	18. 2	+0,6	+4,3	-2,9	+2,0	+1,1	+1,7	+6,8	51
25. 22	+2,5	+4,6	-2,1	+1,9	+1,8	+2,3	+11,0	46	18. 2	+0,6	+4,1	-2,9	+2,6	+1,4	+2,5	+8,3	
25. 22	+0,9	+4,2	-1,3	+1,4	+2,2	+3,2	+10,6		Nov. 8. 8	+0,1	+3,9	-2,7	+1,9	+0,4	+2,3	+5,9	56
27. 4	+0,4	+4,1	-2,1	+2,5	+1,0	+3,5	+9,4	47	16. 2	-0,2	+4,0	-2,3	+1,8	+1,8	+2,9	+8,0	53
May 3. 22	+1,2	+4,2	-2,1	+2,6	+0,7	+3,7	+10,3	46	16. 2	+0,1	+3,8	-2,3	+2,1	+1,9	+2,9	+8,5	
19. 8	+2,9	+4,7	-2,8	+2,3	+2,4	+3,6	+13,1	58	25. 5	0,0	+5,2	-1,2	+1,8	+2,2	+3,0	+11,0	49
31. 2	0,0	+3,9	-2,9	+1,3	-0,3	+2,4	+4,4	52	Dec. 6. 6	+1,6	+4,0	-1,5	+2,0	+1,9	+2,8	+10,8	
31. 2	-0,2	+4,0	-2,6	+1,5	+1,1	+4,4	+8,2		15. 1	+0,8	+3,6	-2,2	0,0	+1,3	+2,6	+6,1	51
June 14. 14	+0,7	+4,1	-3,4	+1,6	+1,5	+2,4	+6,9	57	16. 1	-0,6	+4,4	-2,4	+2,1	+1,5	+2,2	+7,2	
14. 14	+0,7	+3,9	-2,9	+2,1	+1,0	+2,9	+7,7		20. 6	+1,4	+3,8	-2,3	+2,2	+1,6	+3,8	+10,5	49
21. 1	+0,8	+3,5	-3,3	+1,4	+1,2	+2,7	+6,3	62	31. 23	+1,7	+3,9	-1,1	+2,2	+2,0	+3,5	+12,2	48
July 7. 5	+1,1	+3,3	-2,6	+1,3	+0,8	+3,3	+7,2	69	31. 23	+0,1	+3,5	-2,0	+1,8	+1,7	+3,3	+8,4	48
13. 6	+0,4	+3,4	-2,5	+1,7	+0,5	+2,8	+6,3	68									

The correction for Runs used from the beginning of the year to Jan. 22 is the mean between those obtained on Dec. 24, 1851, and Jan. 20, 1852, excepting that the latter value was used for the Zenith Point of Jan. 20. The correction adopted for Feb. 10, when microscopes *A* and *B* were out of use, is derived from the Runs of the other microscopes given by the second and third measures of Feb. 8, the first measures being inadvertently omitted. For the observations from Feb. 4 to Feb. 7 the mean of the three values, viz. +9",4, is used. The correction for Runs for the observation of the Sun on April 22 is derived from the Runs taken on April 25, omitting those of microscopes *C* and *D*. The correction used on Aug. 17 and 18 is the mean of the two obtained on those days. The Runs of Sept. 16, 17 and 19 were taken by Mr Simmonds. The mean of the three corrections obtained on Sept. 16 and 17 is used from Sept. 13. The correction adopted from Dec. 11 is the mean of those given by the measures of Dec. 15 and 16. The Runs of Dec. 15 and the second of Dec. 31 are employed in calculating the value of the micrometer revolution.

The Runs are taken at each determination of the zenith point, the Telescope being directed to the Nadir, and generally a second time, after placing the Telescope in an arbitrary position. In all cases in which the Runs were taken twice, the mean between the two results is used both in the calculation of the Zenith Point and in the reduction of the observations. In general the adopted correction is used about as long before as after the date of its determination.



The readings of the micrometer for bisections of the objects named in the second column are put in the *tenth column*, unless the reading be 10',000, which answers to the reference position of the micrometer-wire.

The amount of correction for reducing an observation to the reference position of the micrometer-wire, is the difference between the recorded micrometer-reading and 10',000, converted into arc by multiplying by 20'',852, which is the arc corresponding to one revolution of the micrometer-head. The correction is positive or negative, according as the micrometer reading is less or greater than 10',000.

On Dec. 15 at 1<sup>h</sup>, and on Dec. 31 at 23<sup>h</sup>, Mr Breen took the two sets of measures given in the subjoined Table to determine the value of one revolution of the Telescope micrometer. During the first set, the Grantchester mark was well defined and very steady, and the circumstances were altogether favourable; but it was difficult at 15' from the centre of the field to see the image of the mark and the micrometer-wire with equal distinctness. On the other occasion the bisections appear to be affected by variations of terrestrial refraction. The correction for Runs obtained immediately after the measures of Dec. 15 was +6'',1, and that obtained after the measures of Dec. 31 was +8'',4. The Temperatures on the respective days were 51° and 48°.

Micrometer reading.	Pointer reading.	Microscope A	B	C	D	E	F	Correction for Runs.	Concluded Circle reading.	Difference.	Mean of consecutive differences.
- 15	201 . 50	0 . 26,6	26,6	23,7	23,1	25,0	23,2	+ 0,5	201 . 50 . 24,78	' "	' "
+ 15	202 . 0	0 . 51,9	51,0	49,2	47,8	50,3	47,4	+ 1,0	202 . 0 . 49,77	10 . 24,99	
+ 15	202 . 0	0 . 52,5	51,7	49,3	48,6	51,1	48,3	+ 1,0	202 . 0 . 50,42		10 . 25,41
- 15	201 . 50	0 . 26,6	26,5	23,4	22,8	25,0	22,8	+ 0,5	201 . 50 . 24,60	10 . 25,82	
- 15	201 . 50	0 . 26,6	26,4	23,6	22,4	24,4	22,7	+ 0,5	201 . 50 . 24,43		10 . 25,73
+ 15	202 . 0	0 . 52,6	52,0	49,4	47,3	50,9	47,3	+ 1,0	202 . 0 . 50,08	10 . 25,65	
- 15	201 . 50	0 . 25,9	25,9	22,4	22,1	21,6	22,8	+ 0,7	201 . 50 . 23,57	' "	' "
+ 15	202 . 0	0 . 52,3	52,2	49,0	48,3	49,7	48,0	+ 1,4	202 . 0 . 50,15	10 . 26,58	
- 15	201 . 50	0 . 24,0	24,4	20,7	19,2	20,8	20,8	+ 0,7	201 . 50 . 21,77	(10 . 28,38)	10 . 26,51
+ 15	202 . 0	0 . 50,6	50,0	47,6	45,3	48,8	45,6	+ 1,4	202 . 0 . 48,22	10 . 26,45	10 . 26,14
- 15	201 . 50	0 . 25,0	25,0	21,4	19,9	21,2	21,1	+ 0,7	201 . 50 . 22,38	10 . 25,84	10 . 25,17
+ 15	202 . 0	0 . 49,6	48,3	46,6	43,8	46,9	44,6	+ 1,4	202 . 0 . 46,87	10 . 24,49	10 . 24,50
- 15	201 . 50	0 . 25,1	25,4	21,3	19,9	21,0	20,7	+ 0,7	201 . 50 . 22,35	10 . 24,52	

After the second measures of Dec. 15 the Sun broke out and the mark became unsteady. The measures were consequently suspended and the Runs were taken in the interval. After the fourth measures on the same day, for greater certainty a second bisection was made for the same position of the micrometer-wire. On Dec. 31 an interruption was caused by the occurrence of a shower between the second and third measures.

The results in the last column from the first set give 10'.25'',57 for the value of 30', and consequently 20'',852 for the value of 1', and those from the other set give 30'=10'.25',58 and 1'=20'',853. The former value is adopted.

When an observation is not made at or very near the middle wire the distance of the place of bisection from the middle wire is stated in the *eleventh column* in whole intervals and parts of an interval between consecutive wires, the negative or positive sign being affixed according as the bisection was made before or after passing the middle wire. The times, as shewn by the Circle Clock Molyneux (M), of the bisection of Polaris or  $\delta$  Ursæ Minoris, and either the difference between Molyneux and the Transit clock Hardy (H), or the error of Molyneux, as found by Circle Transits of known stars, are given in the notes at the bottom of the page.



To reduce an observation of a star to what it would have been if taken at the middle wire, a correction is required for curvature of diurnal path. This correction is calculated as follows. For Polaris or  $\delta$  Ursæ Minoris, when the error of Molyneux is not given, the time by Molyneux is converted into time by Hardy, and thence the true sidereal time is inferred from the error of Hardy given by the transit observations. The correction is then immediately deduced from the difference of the time of bisection and the time of meridian passage given in the Nautical Almanac, by means of Table III, at the end of this Introduction. For other stars the correction is derived by interpolation from Table IV., which has been calculated by a known formula, according to which the correction for a given distance from the middle wire varies as the tangent of declination, and for a given declination, varies as the square of the distance. When the declination is  $45^\circ$ , the correction for one interval from the middle wire, which is traversed by an equatorial star in  $16^s.6$ , is  $0''.1503$ . Since in looking directly at an object between the pole and the equator the telescope is turned by reason of the curvature of path too far in the direction in which the graduation proceeds, the microscope readings are too small, and the correction is consequently positive. The contrary is the case below the equator and below the pole. In a reflection observation the error of position of the Telescope is in the opposite direction, and the sign of the correction is always contrary to that for the direct observation.

The formula for the calculation of corrections for curvature of path in the case of stars near the pole is,

$$\text{Correction} = [5,31445] \sin 2\Delta \sin^2 \frac{15t}{2},$$

$\Delta$  being the star's declination, and  $t$  the interval of the observation from meridian transit. The declination of Polaris being  $88^\circ.29' + n''$ , and that of  $\delta$  Ursæ Minoris  $86^\circ.35' + n''$ , the formulæ used for the calculation of Table III. are,

$$\text{Correction for Polaris} = [4,03802] \sin^2 \frac{15t}{2} - [0,30042] \sin^2 \frac{15t}{2} \times n,$$

$$\text{Correction for } \delta \text{ Ursæ Minoris} = [4,38991] \sin^2 \frac{15t}{2} - [0,29793] \sin^2 \frac{15t}{2} \times n.$$

The corrections for 51 (Hev.) Cephei SP on Aug. 5 and Aug. 6 were calculated by the above general formula. The amounts of the corrections on the latter day, which are not stated in the notes, were  $-0''.38$  for the direct observation, and  $+0''.04$  for the reflection observation.

The additional correction for change of N.P.D., required in observations of the moving bodies, when they are not taken on or near the meridian, has been calculated for the recently discovered Planets, by inferring the change in the interval between the time of observation and the passage across the middle wire, from the horary variation of N.P.D., known either from a working Ephemeris, or from the current observations. The computation of the correction is facilitated by the use of Table V. at the end of this Introduction, which contains the values of the quantity,

$$\frac{16,6}{3600} \times \sec. \text{Decl}^n. \times \text{horary variation of Decl}^n.,$$

for declinations in integral degrees from  $0^\circ$  to  $40^\circ$ , and for horary variations in integral seconds from  $1''$  to  $10''$ . As the corrections for the horary variations  $0''.1$ ,  $0''.2$ ,  $0''.3$ , &c.,  $20''$ ,  $30''$ ,  $40''$ , &c. are obtained by merely changing the place of the decimal point, the Table gives the means of calculating by simple addition the corrections in any case for changes of N.P.D. in one interval from the middle wire. The amount of the



correction required by the observation may then be deduced by multiplying the value for one interval by the number of intervals stated in the eleventh column.

The sign of the correction is determined from the circumstance that when the N.P.D. of the moving body is increasing, the Telescope is pointed for bisecting it too far in the direction of the Circle's graduation before it passes the middle wire, and after passage too far in the opposite direction. The microscope readings require a *plus* correction in the former case, and a *minus* correction in the latter. If the N.P.D. is decreasing, the signs of the corrections are the contrary.

The *Pointer*, which is used for setting the Telescope to observe an object either directly or by reflection, a working catalogue of setting angles to the nearest minute being previously computed, is placed *below* microscope *A* at an interval of  $10^{\circ}.45'$  nearly from the zero of its reading. The graduation proceeding in the direction from the microscope downwards, the pointer reading (which is taken by sight) is the degrees and minutes of that division which in the order of graduation comes next before the position of the pointer. It has been thought unnecessary to place the pointer reading in a separate column, as it may be at once inferred from the concluded circle reading, the minutes being always an integral number of  $5'$ . As first set down, it is sometimes erroneous by a multiple of  $5'$ , but whenever there are means of readily detecting the error, no notice is taken of it in the notes.

The concluded circle reading in the *twelfth column* is the Pointer reading added to the mean of the microscope readings with all the above corrections applied. It is, therefore, the reading which would have been given by the circle, if the microscopes had been in accurate adjustment for runs, and the object had been bisected by the fixed wire at the middle vertical wire. For Polaris or  $\delta$  Ursæ Minoris, the concluded reading applies to the time of meridian passage. If the circle were perfectly graduated, and always retained the circular form, and if the bisections of the divisions were accurately performed, different circle readings obtained in the manner just stated, would be comparable with each other though determined by a single microscope, provided also the zero of the microscope reading retained a fixed position relatively to the axis of the circle. Errors from imperfect graduation, inaccurate bisections, and deviation from the circular form, may be presumed to be corrected in great measure by the use of six microscopes, disposed at the opposite ends of diameters, and at equal intervals round the circle. It appears, however, that there is a residual inequality, which will be presently noticed.

The circle reading corresponding to the position of the Telescope when directed exactly to the zenith is called the *Zenith Point*. The adopted zenith point throughout the year 1852 was obtained by the collimating eye-piece used in the manner explained in page iii. The micrometer reading for coincidence of the micrometer-wire with its image was first deduced from at least six readings for coincidence, or for alternate contact, and the concluded circle reading for the zenith direction was calculated, just as if the image had been a celestial object in the zenith observed by reflection. The zenith point is generally taken in this manner once a week, and the result is used from the third or fourth day previous.

The microscope readings for the determination of the zenith point are inserted among those for the observations of the celestial objects named in the second column. For greater accuracy the microscopes were read twice, and the mean of the two readings of the same microscope is its adopted reading. The concluded circle reading obtained by reducing an observation of nadir point in the same manner as the other observations are reduced, and increased by  $180'$ , is in general the adopted zenith point. The limits within which any value is used are indicated by bars across the column of "concluded circle



readings." If two observations of zenith point occur within the same limits, the value used is the mean between the two results.

The following is a list of the seconds of all the zenith points obtained in 1852, with the approximate mean times at which they were taken. The degrees and minutes were  $66^{\circ}.25'$  to April 27, and  $112^{\circ}.1'$  subsequently, the Telescope having been shifted to a new position on that day. The temperature of the circle room at the times of taking the zenith point is given in the Table of observations of Runs.

*Zenith Points obtained in 1852 with the Collimating Eye-piece.*

Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.
Jan. 20. <sup>A</sup> 4 ..... 10,06		May 3. 22 <sup>A</sup> ..... 12,78		Sept. 16. <sup>A</sup> 6 ..... 13,87	
28. 2 ..... 9,35		19. 8 ..... 12,75		17. 7 ..... 14,31	
Feb. 8. 22 ..... 10,39		31. 2 ..... 12,35		19. 21 ..... 13,58	
17. 22 ..... 9,65		June 14. 0 ..... 11,40		27. 2 ..... 13,71	
24. 22 ..... 10,48		21. 1 ..... 11,05		Oct. 4. 2 ..... 13,31	
Mar. 3. 23 ..... 10,16		July 7. 5 ..... 11,95		11. 2 ..... 12,73	
14. 22 ..... 10,67		13. 6 ..... 12,80		18. 2 ..... 13,63	
22. 7 ..... 9,74		19. 2 ..... 12,85		Nov. 8. .... 12,23	
29. 3 ..... 11,16		Aug. 2. 2 ..... 13,37		16. 2 ..... 11,38	
Apr. 5. 6 ..... 10,72		10. 2 ..... 13,87		25. 5 ..... 11,43	
14. 7 ..... 10,14		18. 4 ..... 12,39		Dec. 6. 6 ..... 11,38	
25. 22 ..... 12,47		25. 7 ..... 12,86		16. .... 10,49	
25. 22 ..... 12,67		Sept. 1. 0 ..... 13,68		20. 6 ..... 10,94	
27. 4 ..... 9,57		8. 6 ..... 13,41		31. 23 ..... 10,72	

The zenith point used on Jan. 3 was carried on from the last of the preceding year. The change of zenith point on April 27 was owing to the change of position of the Telescope on the Circle: by accident the seconds of zenith point were very little altered. On April 27, after the observations of the night, the micrometer-wire was adjusted equatorially, and the operation seems to have changed the zenith point. Microscope B on Feb. 10, and Microscope D on April 22, were out of order and could not be used. In these cases the opposite Microscopes were not read, and the adopted zenith points and Runs were inferred from the measures taken with the four other Microscopes. There were no other instrumental derangements of the zenith point in the course of the year. The tendency to a maximum of value at the hottest season is observable as in other years.

The rule of taking the zenith point once a week was often departed from when cloudy weather caused a suspension of observations. Between March 4 and 15 the collimating eye-piece was detained in my Lecture-room. On other occasions, as between June 21 and July 7, and between July 19 and Aug. 2, no reason was assigned for the omissions. The changes of value from one determination to the next shew that the zenith point might generally have been taken with advantage more frequently. I do not regard these changes to be due to uncertainty in the use of the collimating eye-piece, (the contemporaneous indications of which, as in the above instance of April 25, I have found to be very accordant), but rather to actual changes of zenith point from the effects of temperature and incidental causes. For this reason the adopted zenith points have generally depended on single determinations, and have been used at nearly equal intervals before and after the epochs at which they were respectively made.

The apparent zenith distance, in the direct observation of any object, is the algebraic excess of the concluded circle reading above the adopted zenith point, and for a reflection observation it is the algebraic excess of the nadir point above the concluded circle reading. The object is North or South of the zenith according as the excess is in either case positive or negative. The apparent zenith distance thus obtained is used with the data in the three next columns for the calculation of *refraction*.

The *thirteenth column* has the height of the barometer as shewn by a cistern-barometer constructed by Dollond, and attached to the circle pier. The lower surface of the mercury is raised by a screw pressing the bag till the light seen below a brass edge is excluded;



and a brass slider is brought to the upper surface to shut out the light in the same way. As it appeared by a comparison of this with six other barometers (the particulars of which are given in the volume for 1835, p. xxxi.) that its readings were too small by 0.1 inch nearly, the height immediately read from the barometer, which is that recorded in the thirteenth column, is always increased by that quantity in calculating the refraction.

The *fourteenth column* has the reading of the thermometer whose bulb is plunged in the cistern of the barometer.

The *fifteenth column* contains the reading of an external thermometer, which is fixed to a stage near the north shutter-opening at a distance of four feet from the wall of the building and nine feet from the ground. It is protected from radiation and the weather, and contiguous parts of the building prevent the direct rays of the Sun falling upon it.

The refraction is calculated by Bessel's tables, (*Tabulæ Regiomontanæ*, p. 538, &c.) by making use of the Appendix to the *Greenwich Observations* of 1836. In this mode of calculating the reading of the attached is supposed to be the same as that of the external thermometer. The former reading, though not made use of, is inserted in the printed columns, to allow of correcting, if thought necessary, for the error of this supposition.

By adding the refraction to the apparent zenith distance North or South, the true zenith distance is found, and by adding algebraically the true zenith distance, considered negative when north of the zenith, to the assumed co-latitude of the observatory, viz. 37°.47'.8",00, the Apparent N.P.D. from the observation, given in the *fifteenth column*, is obtained. The result is, therefore, the North Polar Distance of the object named in column 2, at the time of its passing the middle wire, affected, in the case of a body of the Solar System, by *parallax*, and in every case, affected by uncorrected instrumental errors and errors of observation, as also by any errors in the assumed values of the constants employed in the calculations.

The *last column* contains the initial of the observer's name. The letter C indicates that the observation was taken by myself, and the letters B, T, and S, indicate that the observations were taken respectively by Mr Breen, Mr Todd, and Mr Simmonds.

#### IV. *Mean North Polar Distances of Stars, as deduced from the separate observations, and concluded Mean North Polar Distances of the Stars observed in 1852, with the Annual Variations.*

The columns in pages 92—103 contain the names of the stars in order of Right Ascension, the days on which each star was observed, the corrections to be applied to the apparent N.P.D. already calculated, to obtain the mean N.P.D., and the resulting mean N.P.D. Jan. 1, 1852, given by each day's observation. The results by the same star, when observed above, and when below the pole, are arranged separately to serve for correcting the assumed co-latitude. Also, the results by direct observations are separated from those by reflection observations of the same star, for the purpose of exhibiting the effect of the discordance of zenith points spoken of hereafter, and furnishing data for applying a correction. There is also a column of reference numbers, and another of magnitudes noted by the observer at the times of recording the observations.

The corrections applied to the apparent N.P.D. are obtained as follows. For stars included in the list of the Nautical Almanac, the corrections are the algebraic excesses of the apparent above the mean declinations of that work, south declinations being considered negative. For stars not in the Nautical Almanac, but included in the Catalogue of the British Association, the correction  $\delta\Delta$  is calculated by the formula

$$-\delta\Delta = Aa' + Bb' + Cc' + Dd',$$



$\log A$ ,  $\log B$ ,  $\log C$ ,  $\log D$  being taken from the Nautical Almanac, and  $\log a'$ ,  $\log b'$ ,  $\log c'$ ,  $\log d'$  from the Catalogue. For stars not in the Catalogue, the corrections are calculated by the following formula, the numerical factors of which were derived from Bessel's *Tabulæ Regiomontanæ*.

$$\begin{aligned} \text{Correction} = & A \times (\text{No. log} = 9,6374) \times \sin \text{N.P.D.} - A \sin \text{R.A.} \cos \text{N.P.D.} \\ & + B \cos \text{R.A.} \cos \text{N.P.D.} + C \times (\text{No. log} = 1,3022) \times \cos \text{R.A.} - D \sin \text{R.A.} \end{aligned}$$

The remaining columns contain the mean R.A. of the stars to the nearest second, the concluded mean N.P.D. with the number of observations on which they severally depend, and the Annual Variations. The concluded mean N.P.D. is the mean of the separate N.P.D., corrected for the discordance of zenith points and for the error of the assumed co-latitude, in the manner about to be explained. Results in brackets are not taken into account in calculating the concluded mean.

The Annual Variations are calculated by the following formula, the constant of which was deduced from the data in p. x. of the *Tab. Regiomont.*:

$$\text{Annual Variation in N.P.D.} = - [1,30221] \cos \text{R.A.}$$

The remarks relating to the 'observed magnitudes,' the letters affixed to double stars, and the 'notes' in the last column, given in page xvii, apply equally to the Catalogue of concluded mean N.P.D.

The correction for the error of the assumed co-latitude is derived from a determination of the co-latitude of the Observatory, calculated from all the observations of the same stars above and below the pole which were made in the years 1836, 1837, and 1838. The calculation is given in pages lii—lviii. of the Introduction to the Volume of 1838, and the result is, that the assumed co-latitude  $37^{\circ}.47'.8''.00$  should be corrected by  $+0''.37$ . This quantity is accordingly added algebraically to the mean N.P.D., considering them negative when the stars are observed below the pole.

The correction for discordance of zenith points is applied on the following principle. When the mean between the two concluded circle readings for the reflection and direct observations of the same star at the same transit, is increased or diminished by  $90^{\circ}$ , the result is the zenith point given by those observations. On comparing zenith points thus obtained by stars of different N.P.D., the values are found to be slightly discordant: on which account the observation of stars by reflection has been continued at the same time with the use of the collimating eye-piece, for the purpose of obtaining data for applying corrections. The discordance is of such a nature, that the circle reading for zenith point is in general less by a star observed south of the zenith than by a star observed north of the zenith. Apparently when the object-glass is to the south of zenith, the Telescope, whether directed to the heavens or the trough of mercury, requires to be turned, for bisecting an object, a little farther in the direction of the graduation, than if the cause of inequality did not exist; and when the object-glass is to the north of zenith, a little in the contrary direction. Whatever may be the cause of the discordance, the error it produces may be presumed to be corrected by reducing the different zenith points to the zenith point corresponding to a *given* zenith distance. The collimating eye-piece gives correctly the zenith point corresponding to the zenith direction. Hence, if  $M$  be the adopted zenith point employed in the calculation of the apparent N.P.D., and  $Z$  the zenith point resulting from a particular double observation south of zenith,  $M - Z$  is the error of the circle reading in defect, both for the reflection and the direct observation, supposing both to be equally affected by the inequality. By this quantity the N.P.D. is too small as determined by the direct observation, and too great as determined by



the reflection observation; so that the algebraic excess of the latter determination above the other is twice  $M-Z$ . This rule applies to observations north of the zenith, by taking the N.P.D. negative when the star is observed below the pole. The following table exhibits for each star observed directly, and by reflection, the mean value of  $M-Z$ , derived from column 6 in pages 92—103 by halving the algebraic excess of the mean of the N.P.D. by reflection above the mean of the corresponding N.P.D. by direct vision.

*Mean Excess for each Star of the Zenith Points adopted in 1852 above the Zenith Points given by direct and reflection observations.*

Star.	Zen. Dist. South.	No. of Obs.	Mean value of $M-Z$ .	Star.	Zen. Dist. South.	No. of Obs.	Mean value of $M-Z$ .
51 (H.) Cephei SP.	- 40. 32	2	+ 0,26	$\gamma$ Leonis .....	+ 31. 38	1	+ 2,51
Polaris SP.....	39. 16	13	+ 0,02	Arcturus .....	32. 16	1	+ 1,74
Polaris .....	36. 18	3	- 0,25	$\epsilon$ Tauri .....	33. 22	2	+ 1,25
$\delta$ Ursæ Minoris ....	34. 23	5	+ 0,65	Aldebaran.....	36. 1	1	+ 0,27
B.A.C. 2326.....	30. 28	1	- 2,66	$\gamma$ Tauri.....	36. 57	2	+ 0,33
$\kappa$ Cephei .....	25. 3	1	- 1,53	$\alpha$ Herculis .....	37. 39	2	+ 0,74
$h$ Ursæ Majoris ....	11. 29	1	- 1,33	37 Leonis .....	37. 45	1	+ 0,68
$\alpha$ Ursæ Majoris ....	10. 20	2	- 0,59	$\alpha$ Pegasi .....	37. 48	1	- 0,88
$\sigma$ Ursæ Majoris ....	- 8. 59	1	- 0,76	Regulus.....	39. 32	9	+ 0,78
$\theta$ Persei.....	+ 3. 37	1	- 0,94	$\alpha$ Cancri .....	39. 47	1	+ 0,90
$\alpha$ Cygni.....	7. 28	1	+ 0,35	$\xi$ Leonis.....	40. 16	1	+ 1,49
$\lambda$ Ursæ Majoris ....	8. 34	2	+ 0,98	$\iota$ Leonis.....	40. 52	1	+ 0,91
$\alpha$ Lyræ.....	13. 34	2	+ 2,05	$\gamma$ Aquilæ .....	41. 58	1	+ 0,80
$\rho$ Herculis .....	14. 56	2	+ 0,66	$\alpha$ Aquilæ .....	43. 44	2	- 0,13
$\alpha$ Lyncis .....	17. 12	1	+ 0,48	$\epsilon$ Hydræ .....	45. 15	1	- 0,06
$\beta$ Lyræ.....	19. 1	3	+ 1,69	$\alpha$ Serpentis.....	45. 19	2	+ 1,39
Castor <i>nf</i> .....	20. 1	2	+ 0,97	$\delta$ Hydræ.....	46. 0	1	+ 1,53
Castor <i>sp</i> .....	20. 1	1	+ 0,69	$\beta$ Aquilæ.....	46. 11	1	+ 1,19
$\zeta$ Persei.....	20. 47	1	+ 1,96	Procyon.....	46. 37	2	+ 1,63
$\epsilon$ Herculis.....	21. 4	1	+ 0,53	$\beta$ Aquarii.....	58. 26	2	+ 0,67
$\zeta$ Cygni.....	22. 36	1	+ 1,50	$\phi$ Aquarii.....	59. 4	1	+ 1,25
$\sigma$ Herculis.....	23. 28	1	+ 1,93	$\alpha$ Hydræ .....	60. 14	3	- 0,22
Pollux .....	23. 50	6	+ 1,49	Rigel.....	60. 36	1	+ 0,42
$\alpha$ Andromedæ.....	23. 57	1	+ 0,19	Spica .....	62. 36	1	- 0,79
$\epsilon$ Bootis.....	24. 31	1	+ 1,75	$\alpha^1$ Capricorni .....	65. 11	2	+ 2,23
$\psi$ Bootis.....	24. 41	1	+ 0,37	$\alpha^2$ Capricorni .....	65. 13	2	+ 2,52
$\phi$ Geminorum.....	25. 4	2	+ 1,46	$\eta$ Ophiuchi.....	67. 45	1	+ 1,20
$\epsilon$ Leonis.....	27. 46	2	+ 1,68	Sirius .....	68. 44	3	+ 1,45
$\eta$ Tauri.....	28. 34	1	+ 2,32	$\beta$ Corvi.....	74. 48	1	+ 3,00
$\zeta$ Geminorum.....	31. 26	1	+ 1,16	Antares.....	78. 19	4	+ 1,20

From the foregoing Table the corrections to be applied to N.P.D. observed directly were deduced as follows. The above mean values of  $M-Z$  were divided into groups the limits of which (indicated by the lines across) were chosen so that the stars of each group do not greatly differ in zenith distance. Each mean value in the group was multiplied by the number of observations by which it was determined, and the corresponding zenith distance by the same number. The sum of each series of products being divided by the whole number of observations in the group, the resulting value of  $M-Z$  was considered to belong to the resulting zenith distance. A line of abscissæ was then drawn on which these zenith distances were set off, and the corresponding values of  $M-Z$  being taken for ordinates, a curve was traced by hand among the points thus laid down,



so as to approach nearer to any point, the greater the number of observations by which its position was determined. Ordinates of this curve were then measured at intervals of  $5^\circ$ , and the measures with the corresponding N.P.D. were tabulated, to serve for obtaining by interpolation the correction for any proposed N.P.D. From what has already been said, the sign of the correction for a direct observation is the same as that of  $M-Z$ , or the ordinate of the curve, and for a reflection observation, the contrary sign. In the subjoined Table the correction  $+0''.37$  for error of assumed co-latitude is included.

*Corrections for Discordance of Zenith Points and Error of the assumed Co-latitude, applied to N.P.D. obtained by direct and reflection observations in 1852.*

N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.
$-5^\circ$	$+0.59$	$+0.15$	$40^\circ$	$+0.44$	$+0.30$	$85^\circ$	$+1.02$	$-0.28$
$0$	$+0.29$	$+0.44$	$45$	$+0.85$	$-0.11$	$90$	$+0.97$	$-0.23$
$+5$	$+0.06$	$+0.68$	$50$	$+1.32$	$-0.58$	$95$	$+1.07$	$-0.33$
$10$	$-0.13$	$+0.87$	$55$	$+1.63$	$-0.89$	$100$	$+1.45$	$-0.71$
$15$	$-0.28$	$+1.02$	$60$	$+1.79$	$-1.05$	$105$	$+1.78$	$-1.04$
$20$	$-0.35$	$+1.09$	$65$	$+1.80$	$-1.06$	$110$	$+1.91$	$-1.17$
$25$	$-0.32$	$+1.06$	$70$	$+1.69$	$-0.95$	$115$	$+1.96$	$-1.22$
$30$	$-0.21$	$+0.95$	$75$	$+1.45$	$-0.71$	$120$	$+1.97$	$-1.23$
$35$	$+0.04$	$+0.70$	$80$	$+1.20$	$-0.46$		$+1.98$	$-1.24$

The curve representing the law of the discordance of zenith points has the same general form as in previous years. The correction for the discordance in the zenith direction is  $+0''.09$ , shewing that the zenith given by the collimating eye-piece is a little more *southward* than that given by the reflection observations of stars. This result, however, is uncertain on account of the small number of reflection observations taken near the zenith in 1852. The reflection observations of low southern stars are more numerous than usual, and seem to shew decidedly that the co-ordinates of the curve have a minimum value at about  $90^\circ$  of N.P.D.

*V. Horizontal and Vertical Measures of the Diameters of the Sun and Moon, compared with Tabular Diameters. Pages 106 and 107.*

The sidereal intervals occupied by transits of diameters are the differences of the concluded transits of the first and second Limbs over the mean of the seven wires, extracted from column 10 of the observed R.A., and corrected in the case of the Moon for defect of illumination of one of the Limbs, as will be presently explained. The vertical diameters of the Sun by observation are the differences of the apparent N.P.D. of the North and South Limbs, extracted from the Circle observations, and corrected for the difference of the Parallax of the Limbs.

The tabular intervals occupied by the transits of diameters, and the tabular diameters, were taken for the Sun, and, in the first instance, for the Moon, from the Nautical Almanac, the Moon's semi-diameter being interpolated to second differences. But as Adams's corrections are applied to the Moon's Parallax, the tabular semi-diameter was finally taken equal to the corrected Horizontal Equatorial Parallax multiplied by the constant 0.273114. (See Naut. Alm. of 1857, p. vii.) The tabular interval of transit of the Moon's diameter was then altered in the ratio of the new value of the semi-diameter to the interpolated value.

The differences between the observed and the tabular values of the intervals of transit and of the vertical diameters are exhibited for the purpose of furnishing data for correcting the tabular diameters. In the case of the Moon, the tabular error of the interval



of transit is converted into error of diameter in arc, by assuming the latter to have to the Moon's semi-diameter the same ratio that the former has to the sidereal interval occupied by the transit of the semi-diameter.

VI. *Right Ascensions and North Polar Distances of the Sun, the Moon, and Planets observed in 1852, compared with Tabular R.A. and N.P.D.; with the Greenwich Mean Solar Times of Transit of centre.* Pages 108—115.

The concluded Right Ascensions and North Polar Distances of the centres of the moving bodies are deduced from their apparent R.A. and N.P.D. in the previous part of the work, by applying corrections of which the explanation is as follows.

The only corrections applied to Apparent Right Ascensions are those for reducing observations of limbs to observations of centres. It is to be understood, that both limbs of the Sun were observed unless one is mentioned under the head of 'Limb observed,' and that the concluded R.A. of centre is the mean of the apparent R.A. of the limbs.

When one limb of the Sun is observed, the R.A. of centre is inferred from the apparent R.A. of the Limb, by applying the sidereal time occupied by the transit of the semi-diameter as given in the Nautical Almanac.

The Right Ascension of the Moon at the time of transit of centre is obtained from the observed R.A. of the Limb, by applying the sidereal time occupied by the transit of the semi-diameter, taken, first, from the section of Moon-culminating stars in the Nautical Almanac, and then altered in the ratio of the semi-diameter, deduced, as stated above, from Adams's corrected parallax, to the interpolated semi-diameter.

The corrections for defect of illumination of one of the Moon's Limbs, the amounts of which are stated in the notes in pages 110 and 111, were found by first ascertaining the Moon's distance in R.A. from the point of opposition to the Sun, and multiplying this distance by the cosine of the Sun's declination. The versed sine of the resulting arc on the Moon's surface, converted into time, is the required correction, and is additive or subtractive according as the second or first limb was defective.

The *Geocentric North Polar Distance of Centre* from observation, is deduced from the observed apparent N.P.D., by applying corrections for parallax, for semi-diameter when a single Limb is observed, and for the error of assumed co-latitude and the discordance of zenith points. In the case of the Sun, the observed apparent N.P.D. of centre is the mean of the observed N.P.D. of the Limbs; and in the case of the Moon, the observed apparent N.P.D. of the Limb is the mean of the determinations at the several wires, corrected for the position of the Circle, as will be shortly explained.

The parallaxes of the Sun and Planets were calculated as follows. Let  $r$  and  $D$  be respectively the lines from the centre of the Earth to the place of observation and object observed,  $\alpha$  the angle they make with each other,  $r'$  the Earth's equatorial radius,  $D'$  the mean distance of the Sun from the Earth, and  $p$  the correction for parallax. Then  $p = \frac{r}{r'} \times \frac{r'}{D'} \times \frac{D'}{D} \sin \alpha$ .  $\log \frac{r}{r'}$  is taken = 9.9990916, which supposes the ratio of the Earth's axes to be that of 297 to 298;  $\log \frac{r'}{D'} = 0.9333658$ , the assumed value of the Sun's equatorial horizontal parallax at the mean distance being  $8''.5776$ ;  $\log \frac{D'}{D}$  is the arithmetical complement of  $\log$  distance given by theoretical calculation; and  $\alpha$  is found by subtracting  $11'.12''$ , the angle of the vertical corresponding to the above ratio of the axes, from the observed zenith distance. When both limbs of the Sun are observed, the parallax of each is calculated, for the purpose of correcting the measure of the diameter



to its value as seen from the Earth's centre, and the mean of the two parallaxes is applied to the apparent N.P.D. of centre.

The formula used for computing the parallax of the Moon's Limbs is

$$\sin p = \frac{r}{r'} \sin (P + \alpha) \sin z,$$

where  $P$  is Adams's equatorial horizontal parallax, and the quantity  $\alpha$  is a small correction introduced by finding exactly the parallax of the Limb, that is, the angle made by a tangent to the highest or lowest point of the Moon's surface, as seen from the place of observation, with a tangent to the highest or lowest point, as seen from the Earth's centre. In using the above formula, the sine is not considered equal to the arc. The other elements of the calculation are the same as for the planets.

For the calculation of  $\alpha$ , which is dependent on the zenith distance, I must refer to the *Cambridge Observations*, Vol. IV, for 1831, p. 147. The following is a Table of its values for the North and South Limbs, and for different zenith distances.

Zenith Distance.	30°	35	40°	45°	50°	55°	60°	65°	70°	75°	80°
Corr. for N.L.	- 0,03	- 0,04	- 0,05	- 0,06	- 0,06	- 0,07	- 0,08	- 0,08	- 0,09	- 0,09	- 0,09
Corr. for S.L.	+ 0,10	+ 0,11	+ 0,12	+ 0,12	+ 0,13	+ 0,14	+ 0,15	+ 0,15	+ 0,16	+ 0,16	+ 0,16

When a single Limb of the *Sun* is observed with the Circle, the assumed semi-diameter applied to the Geocentric N.P.D. of the Limb, is taken immediately from the Nautical Almanac.

For the *Moon*, the assumed semi-diameter is the equatorial horizontal parallax multiplied by the constant 0,273114.

The corrections applied for defect of illumination of the Moon's North or South Limb, the amounts of which are stated in the notes in pages 110 and 111, were calculated as follows. From the spherical triangle  $SPM$ , the angles of which are at  $P$  the pole of the heavens,  $S$  the Sun's centre, and  $M$  the Moon's centre, the angle  $PMS$  was calculated from the known parts,  $PS$ ,  $PM$ , and the angle  $SPM$ . According as the angle  $PMS$  is greater or less than  $90^\circ$ , the North Limb or the South Limb is defective. This calculation was performed whenever both Limbs were observed, to decide which was the defective Limb, and when a single Limb was observed, if it were doubtful whether or not it was defective. The side  $SM$  being calculated from the same triangle, and  $\theta$  being the difference between  $90^\circ$  and the angle  $PMS$ , an angle  $\theta'$  was calculated by the formula  $\sin \theta' = \sin \theta \sin SM$ . Then  $\Delta$  being the measure of the Moon's diameter by the observation, the required correction is  $\Delta \tan^2 \frac{\theta'}{2}$ , additive or subtractive according as the South or North Limb was defective.

As the corrections for change of the Moon's N.P.D. reduced the observations to the position of the middle wire, additional small corrections were required on account of the deviation of the middle wire from the meridian. These corrections were calculated as follows.

The position of the Circle was first ascertained by Circle transits of known stars which gave the following results, the errors of Molyneux being obtained by comparisons with Hardy.

Day of Observation 1852.	Star.	N.P.D.	Interval from meridian to middle wire.	Day of Observation 1852.	Star.	N.P.D.	Interval from meridian to middle wire.
March 2	... $\delta$ Cancr.	71.18	... -2.19	Aug. 26	... $h^3$ Sagittarii	115.12	... +0.66
2	... $\alpha$ Cancr.	77.34	... -2.17	26	... $e^3$ Sagittarii	106.28	... +0.61
2	... Regulus	77.19	... -2.26	26	... $\gamma$ Aquilæ	79.45	... -0.23
2	... $\delta$ Geminorum	67.45	... -2.37	27	... 29 Capricorni	105.47	... -0.26
May 3	... $\xi$ Libræ	100.49	... -0.68	27	... $\mu$ Capricorni	104.15	... -0.07
4	... $\delta$ Leonis	68.40	... -1.49	Sept. 24	... $\delta$ Capricorni	106.48	... +0.64
11	... $\beta$ Corvi	112.35	... +0.76	25	... $\beta$ Aquarii	96.13	... +0.17
12	... $\beta$ Corvi	112.35	... +0.66	Oct. 1	... $\beta$ Aquilæ	83.58	... +0.19
June 30	... $\beta$ Scorpii	109.24	... (-2.41)	7	... $\alpha^2$ Capricorni	103.0	... +0.76
July 1	... $\alpha$ Serpentis	83.6	... (-2.12)	Nov. 20	... $\psi^3$ Aquarii	100.25	... +0.14
23	... $\gamma$ Aquilæ	79.45	... -1.70	Dec. 14	... $\alpha$ Orionis	82.38	... -1.25
23	... $\alpha$ Aquilæ	81.31	... -1.21	17	... $\beta$ Ceti	108.48	... +0.05

There were no comparisons of Molyneux with Hardy sufficiently near the observations of June 30 and July 1, the results of which are consequently doubtful, and are not used. The apparent R.A. of the stars not in the list of the Nautical Almanac are taken from the Section of Moon-culminating stars in that work.

Previous to April 27, when the Circle was taken from the wall, there were not enough observations for determining the Circle's position. Those of March 2 give as a mean result  $-2^s.25$  for the interval from the meridian to the middle wire corresponding to the N.P.D.  $73^{\circ}.29'$ . The values obtained in 1851 give  $-1^s.66$  for the same N.P.D. It has, therefore, been thought sufficiently correct to use the values of 1851 to April 27, with the constant correction  $-0^s.59$ . Those used subsequently to April 27 were obtained from the remainder of the above results by graphical construction. The following is a list of the adopted intervals:

N.P.D.	Interval from meridian to middle wire.		N.P.D.	Interval from meridian to middle wire.	
	To April 27.	After April 27.		To April 27.	After April 27.
60	... -2.49	... -1.55	95	... -1.79	... -0.26
65	... -2.43	... -1.42	100	... -1.68	... -0.04
70	... -2.31	... -1.27	105	... -1.55	... +0.22
75	... -2.22	... -1.10	110	... -1.44	... +0.49
80	... -2.11	... -0.90	115	... -1.35	... +0.78
85	... -1.99	... -0.71	120	... -1.25	... +1.06
90	... -1.89	... -0.50			

The interval from the meridian for any observation being obtained from the foregoing data by interpolation, the change of the Moon's N.P.D. in the interval was calculated from the variation for  $10^m$  in the hourly Ephemeris of the Nautical Almanac.

In addition to the above transits, others were taken unaccompanied by comparisons of Molyneux with Hardy, which were employed to determine the error of Molyneux for reducing observations of Polaris and  $\delta$  Ursæ Minoris to the meridian. It has not been thought worth while to insert these observations: the foregoing results shew that the Circle was adjusted to the meridian nearly enough to be used for this purpose.

All the observations of N.P.D. of the Sun, Moon, and Planets have been corrected for the discordance of zenith points and the error of the assumed co-latitude, by the Table in p. xxvi.

The *Greenwich Mean Solar Times* were calculated by adding to the equivalent in mean time of the sidereal time of transit, the next preceding mean time of transit of the first point of Aries, diminished by  $22^s.69$ , the longitude of the Cambridge Observatory being  $22^s.75$  East of Greenwich, according to a new determination made in 1853 by galvanic signals, the particulars of which are published in the Transactions of the Cambridge Philosophical Society, Vol. IX. Part IV.



In all the instances in which Circle observations were not accompanied by Transit observations, the Greenwich Mean Times are deduced from the Tabular R.A., as given in the Nautical Almanac, or by Ephemerides, or as obtained by special calculation, corrections being applied for known errors of the Tables in R.A.

The *seconds of Tabular R.A. and N.P.D.*, from which the *Errors of the Tables* are deduced, have been derived for the Sun from the R.A. and N.P.D. at meridian transit in the Nautical Almanac, by applying corrections for the difference of meridians. The seconds of Tabular R.A. of the Moon's centre are calculated, by first applying to the R.A. of the Limb in the section of Moon-culminating stars in the Nautical Almanac the sidereal time occupied by the transit of the semi-diameter as there given, and then correcting for the difference of meridians. The seconds of N.P.D. of centre are derived from the same section of the Nautical Almanac by merely correcting for the difference of meridians.

The reduction of the Tabular R.A. and N.P.D. of the Sun, Moon, and Planets from the Greenwich to the Cambridge transit, is facilitated by the use of Table VI. at the end of this Introduction, which gives the means of readily calculating the value of  $\frac{22,75}{3600} \times$  the horary variation of Right Ascension or Declination, for all values of the horary variation to 1300 seconds of time or space.

The observed places of the Planets are all compared with places computed from Ephemerides, or from Elements.

*Flora.* The Tabular R.A. and N.P.D. and Log. distance were computed from the Elements in p. 390 of the *Berliner Jahrbuch* for 1854. For the calculation of the aberration corrections, the variations of R.A. and N.P.D. were taken from the daily Ephemeris in p. 644 of the Nautical Almanac for 1854, to the extent of that Ephemeris, and subsequently they were inferred by interpolation from the R.A. and N.P.D. computed from the Elements.

*Melpomene.* The Tabular places and Log. distance were computed from the Elements given by Dr Brulns in the *Astronomische Nachrichten*, Vol. xxxviii. col. 71, the aberration corrections being deduced from the R.A. and N.P.D. obtained directly from the Elements.

*Metis.* The Tabular R.A. and N.P.D. are taken from the Ephemeris in p. 638 of the Nautical Almanac for 1855, allowance being made for difference of meridians. The Tabular place of May 19 was obtained by extending the Ephemeris one day by differences. Log. distance for the calculation of parallax was interpolated from the ten-day Ephemeris in p. 637 of the same volume.

*Massilia.* The Tabular quantities were calculated from Günther's Elements in the *Astronomische Nachrichten*, Vol. xxxix. col. 165. The aberration corrections were deduced from the calculated R.A. and N.P.D.

*Lutetia.* The Tabular quantities were calculated from the Elements in the *Berliner Jahrbuch* for 1857, p. 443. For the calculation of the aberration corrections, which could not be correctly inferred from only two computed places, I availed myself of observed places given in the *Astron. Nach.* Vol. xxxvi. col. 247.

*Fortuna.* The Tabular quantities were calculated from Brorsen's Elements in the *Astron. Nach.* Vol. xxxvi. col. 125. The variations of R.A. and N.P.D. for the aberration corrections, were deduced by interpolation from the calculated R.A. and N.P.D., with the exception of those of Oct. 12, which were inferred from places observed at Greenwich on Oct. 11 and 12.



*Thetis.* The Tabular place and Log. distance were calculated from the Elements in the *Berliner Jahrbuch* for 1857, p. 443. The aberration corrections were inferred from places observed at Berlin on April 26 and 28, which are given in the *Astron. Nach.* Vol. xxxiv. col. 211 and 279.

*Egeria.* The Tabular quantities were calculated from the Elements in the *Berliner Jahrbuch* for 1857, p. 442. The aberration corrections were all deduced from the calculated R.A. and N.P.D.

*Irene.* The Elements of Sig<sup>r</sup>. V. Trettenero in the *Astron. Nach.* Vol. xxxvi. col. 193, were used for calculating the Tabular R.A., N.P.D. and Log. distance; and the approximate Ephemeris by the same computer in Vol. xxxiv. col. 247, was used for calculating the aberration corrections.

*Thalia.* The Tabular place and Log. distance were calculated from the Elements in the *Berliner Jahrbuch* for 1857, p. 443. The aberration corrections were inferred from Berlin observations of the Planet on Dec. 21, 22 and 23, given in the *Astron. Nach.* Vol. xxxv. col. 397.

*Calliope.* The Tabular R.A., N.P.D. and Log. distance were interpolated from Hornstein's Ephemeris in the *Astron. Nach.* Vol. xxxvi. col. 281. It has been assumed that this Ephemeris includes aberration.

*Psyche.* The Tabular quantities were computed from the Elements by Klinkerfues in the *Astron. Nach.* Vol. xxxviii. col. 182. The aberration corrections were deduced from the computations.

*Hygeia.* The Tabular places and Log. distance were interpolated from the Ephemeris by Professor Chevallier in the *Astron. Nach.* Vol. xxxv. col. 387. The aberration corrections were deduced from the Ephemeris, and the 'aberration times' given with the Ephemeris.

*Neptune.* The Tabular places and Log.  $\Delta$  were interpolated from Walker's Ephemeris in the *Astronomical Journal*, Vol. II. p. 37. Aberration is supposed to be included in the Ephemeris. For those days on which the Planet was not observed in R.A. the Greenwich Mean Times were deduced from the R.A. of the Ephemeris.

The number of wires at which each transit of a Planet was taken (inserted in the second column) has been added for the purpose of helping to form a judgment of the weights to be given to the separate observations. It may also be stated that the observed places of the Minor Planets have been compared with calculated places, not for the purpose of contributing to the theories of these bodies, but in order to certify that the object taken was the Planet, and to give the means of judging of the worth of individual observations.

The *Determination of the Position of the Ecliptic and of the mean error of the assumed Right Ascensions of the Fundamental Stars from the Transit and Circle Observations of the Sun in 1852*, in pages 287 and 288, has been inserted to give the means of inferring absolute errors of the Solar, Lunar, and Planetary Tables from the observations of this Volume. The calculations have been made on the following principles.

The true longitude  $\lambda$ , and true North Polar Distance  $\Delta$ , of the Sun's centre, and the true obliquity  $I$ , at any instant, are related to each other by the equation

$$\cos \Delta = \sin \lambda \sin I;$$

and the tabular longitude  $\lambda + \delta\lambda$ , the tabular North Polar Distance  $\Delta + \delta\Delta$ , and the assumed obliquity  $I + \delta I$ , in the Nautical Almanac, for the same instant, by the equation

$$\cos (\Delta + \delta\Delta) = \sin (\lambda + \delta\lambda) \sin (I + \delta I).$$



Hence neglecting powers of the errors  $\delta\lambda$ ,  $\delta\Delta$ ,  $\delta I$ , above the first,

$$\Delta\delta + \operatorname{cosec} \Delta \cos \lambda \sin I \delta\lambda + \operatorname{cosec} \Delta \sin \lambda \cos I \delta I = 0 \dots\dots\dots (A).$$

Now it is assumed that the changes of  $\lambda$  and  $I$  in the course of a year are in accordance with the theoretical calculations, and consequently that their values, as given in the Nautical Almanac, are affected, if by any, by constant errors, which it is proposed to find.

The actual errors of the Solar Tables in N.P.D. cannot be immediately derived from the errors in the columns of pages 108—110, because though mere errors of observation may be supposed eliminated in the mean result from a large number of observations, there may still remain uncorrected instrumental errors and errors of reduction. Representing therefore by  $\alpha$  any error in N.P.D. taken from those columns, and by  $p$  the excess of the observed above the true N.P.D. we shall have

$$\delta\Delta = (\text{Tabular N.P.D.} - \text{observed N.P.D.}) + (\text{observed N.P.D.} - \text{true N.P.D.}) = \alpha + p;$$

and as we are ignorant of the causes to which  $p$  may be owing, it is assumed to be constant within the limits of the tropics. The formula used in page 116 is obtained by putting  $m$  for  $\sin I \delta\lambda$ ,  $n$  for  $\cos I \delta I$ , and  $\alpha + p$  for  $\delta\Delta$  in equation (A).

Instead of forming a separate equation from this formula for every different value of  $\alpha$ , the whole number of observations is divided into twelve groups, the mean of the values of  $\alpha$  in each group is considered to correspond to the day nearest the numerical mean of the days of observation in the group, and  $\lambda$  and  $\Delta$  are taken for the mean noon of the mean day from the Nautical Almanac. In this manner twelve different equations were formed. The rest of the calculation for finding  $m$ ,  $n$ ,  $p$ , and the mean errors of the Sun's Tabular R.A., the Tabular value of the obliquity, and the assumed R.A. of the fundamental stars, requires no explanation additional to that given in pages 116 and 117.

## VII. *Occultations of fixed stars by the Moon, and Calculation of the Equations given by the Occultations.* Pages 120—123.

The sidereal times of the phenomena were derived from the noted times by means of the comparisons in page 120, and the Greenwich Mean Solar Times were calculated in the manner already stated. For the calculation of the occultations, the geocentric R.A. and N.P.D. of the Moon's centre, the Horizontal Equatorial Parallax, and the Geocentric Semidiameter, were interpolated for the time of observation with second differences from the Nautical Almanac, whence also the assumed R.A. and N.P.D. of the stars were taken. The Moon's apparent R.A., N.P.D., and semidiameter, the apparent distance of the star from the Moon's centre, and the coefficients of small variations, were calculated by the formulæ in the Appendix to the Nautical Almanac for 1854, which are for the most part the same as those given in pages xxxiii. and xxxiv. of Vol. XIII. of the *Cambridge Observations*. The former take into account any error ( $\nu$ ) of the assumed geocentric colatitude of the Observatory by the following equations:

$$\text{coefficient of } \nu \text{ in } \delta R = \sin \theta \operatorname{cosec} \theta' \cot l \sin (\theta - \theta'),$$

$$\text{coefficient of } \nu \text{ in } \delta\lambda = -F' \frac{\sin \theta}{\sin \theta'} \cdot \frac{\sin \lambda}{\sin \lambda'} (\cos \lambda \cos l \cos \theta + \sin \lambda \sin l),$$

in which  $\theta$  is the apparent hour angle of the Moon's centre,  $\theta'$  the geocentric hour angle,  $\lambda$  the apparent N.P.D.,  $\lambda'$  the geocentric N.P.D.,  $l$  the assumed geocentric colatitude  $37^\circ. 58'. 20'', 37$ , and  $F'$  is the sine of the horizontal parallax. The angle of the vertex and the ratio of the distance of the Observatory from the Earth's centre to the equatorial radius, have been computed on the supposition that the ratio of the latter to the Polar radius is that of 298 to 297.

## OBSERVATIONS OF 1853.

The explanation of the printed observations being generally the same for 1853 as for 1852, it will suffice to advert only to what is peculiar to the former year, and to give an account of the constants employed in the reduction of the observations.

I. *Apparent Right Ascensions observed with the Transit.* Pages 126—162.

Stars in Oeltzen's Reduction of Argelander's southern zones are designated by the letters A (o.) prefixed to the Catalogue number: in other respects the nomenclature is the same as that stated in p. i.

The following Table of intervals of the Transit wires from the mean of all, used from the beginning of the year to August 29, is the same as that used in 1852 from Dec. 10, the formation of which is explained in p. ii.

Wire.	Interval for an Equatorial Star.	Interval for Polaris. Declination = $88^{\circ}.31' + n''$ .	Interval for $\delta$ Ursæ Minoris. Declination = $86^{\circ}.36' + n''$ .
	<i>s.</i>	<i>m.</i> <i>s.</i> <i>s.</i>	<i>m.</i> <i>s.</i> <i>s.</i>
A	-40,327	-26 . 1,22 - 0,294 <i>n</i>	-11 . 20,26 - 0,056 <i>n</i>
B	-26,895	-17 . 19,96 - 0,195 <i>n</i>	-7 . 33,57 - 0,037 <i>n</i>
C	-13,656	-8 . 47,69 - 0,099 <i>n</i>	-3 . 50,28 - 0,019 <i>n</i>
D	-0,010	-0,37	-0,16
E	+13,633	+8 . 46,79 + 0,099 <i>n</i>	+3 . 49,89 + 0,019 <i>n</i>
F	+26,905	+17 . 20,34 + 0,195 <i>n</i>	+7 . 33,73 + 0,037 <i>n</i>
G	+40,349	+26 . 2,08 + 0,294 <i>n</i>	+11 . 20,63 + 0,056 <i>n</i>

Subsequently to August 29 dark bars were inserted, two on each side of the system of wires, for the purpose of observing faint objects with very little illumination of the field; and it was necessary, in consequence, to insert a new set of wires. The following Table of intervals of the latter, used from September 21 to the end of the year, was calculated from eleven complete transits of Polaris taken from Oct. 3, 1853, to April 13, 1854, excepting that the interval of *D* from the mean of the wires given by the transit of April 11 was rejected as being too discordant.

Wire.	Interval for an Equatorial Star.	Interval for Polaris. Declination = $88^{\circ}.32' + n''$ .	Interval for $\delta$ Ursæ Minoris. Declination = $86^{\circ}.36' + n''$ .
	<i>s.</i>	<i>m.</i> <i>s.</i> <i>s.</i>	<i>m.</i> <i>s.</i> <i>s.</i>
A	-40,353	-26 . 20,03 - 0,300 <i>n</i>	-11 . 20,69 - 0,056 <i>n</i>
B	-26,870	-17 . 30,72 - 0,199 <i>n</i>	-7 . 33,11 - 0,037 <i>n</i>
C	-13,579	-8 . 50,59 - 0,100 <i>n</i>	-3 . 48,95 - 0,019 <i>n</i>
D	+0,067	+2,68	+1,15
E	+13,520	+8 . 48,37 + 0,100 <i>n</i>	+3 . 47,99 + 0,019 <i>n</i>
F	+26,907	+17 . 32,33 + 0,200 <i>n</i>	+7 . 33,80 + 0,037 <i>n</i>
G	+40,308	+26 . 18,35 + 0,300 <i>n</i>	+11 . 19,96 + 0,056 <i>n</i>

Those observations which were taken by transits at the bar-edges are indicated by the letter B after the name of the object in column 2. The observations of Polaris taken at the bars, as for instance those on Sept. 26, are not reduced, but are employed solely for determining the equatorial intervals of the bar-edges from the mean of the wires.



These intervals were calculated from all the instances, extending from Sept. 26, 1853, to July 24, 1854, in which transits were taken at the wires and at the bars in the same meridian passage, the mean of the wire-transits being reduced to the mean of all the wires by the Table above. To each interval from the mean of the wires thus obtained for a given edge, and to the corresponding declination of Polaris, a weight was attached proportional to the number of wire-transits, and from all the intervals and weights a mean interval corresponding to a mean declination was calculated, which was then reduced by the usual formula to an equatorial interval. Calling the bar-edges, in the order in which they are passed over by a star above the Pole when the Illumination is East,  $a_1, a_2, b_1, b_2, c_1, c_2, d_1, d_2$ , the following are the equatorial intervals that have been used for the reduction of the observations taken at the bars.

Bar-edge.	Equatorial Interval from the mean of the wires.	Bar-edge.	Equatorial Interval from the mean of the wires.
$a_1$ .....	-69,957	$c_1$ .....	+53,553
$a_2$ .....	-67,165	$c_2$ .....	+56,373
$b_1$ .....	-56,883	$d_1$ .....	+66,887
$b_2$ .....	-54,076	$d_2$ .....	+69,667

It appears from these results that the interval from the mean of all the wires to the mean of all the edges is  $-0^s,200$ , to the mean of the edges  $a_1, b_1, c_1, d_1$ ,  $-1^s,600$ , and to the mean of the edges  $a_2, b_2, c_2, d_2$ ,  $+1^s,200$ . The times of disappearance at first edges are considered to admit of being observed with more certainty than the times of reappearance at second edges, except the star be very near the Pole, and for this reason the transits of the former kind have been usually taken. All instances in which the transits were taken at second edges are mentioned in the notes, and when the edges are not named, *first* edges are to be understood.

For facility of calculation a Table was formed of the corrections for an Equatorial star in all the cases that could possibly occur, so that the correction in any case for another star is obtained by multiplying the correction in the Table by the cosecant of the star's N.P.D.

All the observations being thus reduced to the mean of the wires, corrections were next applied for the forms of the pivots, that is, for any errors by which the reductions to the meridian might be affected by calculating on the supposition that the pivots are cylindrical and equal. These corrections were obtained by the following process.

The angular position of the straight line joining two points situated at the ends of the pivots near the axis of motion, and rigidly connected with the instrument, was ascertained for various zenith distances by measuring with two microscope-micrometers vertical and horizontal co-ordinates of the points in the plane of the meridian. This angular position is geometrically connected with the angle which an adopted line of collimation makes with the meridian plane, and the latter may be calculated from the former, by means of a formula involving three constants to be instrumentally determined. The instrumental operations for finding the constants are exactly the same as those by which the collimation, level, and azimuth errors are found on the supposition of equal and cylindrical pivots. Hence the reduction to the meridian for the position of the Transit may be calculated in two ways from the same data, and the results for a given zenith distance ought to agree if the pivots were really equal and cylindrical. The differences between the results may be attributed to the form and relative size of the pivots. These differences being ascertained at any date for zenith distances increasing by a given interval,



as  $5^\circ$ , may be assumed to be obtained with sufficient accuracy for any zenith distances by interpolation.

A description of the manner of using the microscope-micrometers for the purpose above mentioned, and an investigation of the general formula for the angular deviation ( $\xi$ ) of the line of collimation from the plane of the meridian, with the methods of determining the three constants which the formula involves, are given in detail in the Memoirs of the Royal Astronomical Society, Vol. XIX. p. 103, to which I beg to refer for further information.

The general formula for the value of  $\xi$  is

$$\xi = d + (f_2 y_2 + k - f_1 y_1) \cos z + (g_2 x_2 + h - g_1 x_1) \sin z,$$

in which  $y_1, y_2$  are the micrometer readings for bisection of the east and west points respectively by the micrometer wires placed horizontally, and  $x_1, x_2$  are the micrometer readings for bisection of the same by the wires placed vertically:  $f_1, f_2, g_1, g_2$  are factors by which the micrometer readings are converted into seconds of arc:  $f_1 y_1, f_2 y_2 + k$  are the vertical ordinates of the points in seconds referred to the same horizontal plane, and  $g_1 x_1, g_2 x_2 + h$ , are the horizontal ordinates referred to the same vertical plane perpendicular to the meridian, the former being reckoned positive upwards, and the latter positive towards the south:  $d$  is a constant which has a different value according as the Illumination is East or West, and  $z$  is the Zenith Distance South.

For finding the factors  $f_1, f_2, g_1, g_2$ , two circles of known diameters are engraved about the points, or dots, bisected by the micrometer wires. The distance between the dots being ascertained by measurement, the angles subtended by the diameters at the opposite dots, that is, the angular measures of the diameters, are known. The factor to be used for converting a micrometer reading of either microscope into angular measures for a given position of the Transit, is found by dividing the angular measure of the diameter of that circle which surrounds the dot bisected, by its measure in micrometer revolutions.

Let  $d_e$  and  $d_w$  represent the values of  $d$  for Illumination East and West respectively. Then supposing  $\xi$  to be positive if the line of collimation points to the *East* of the meridian, the value of  $\xi$ , when the Telescope is directed to the Nadir, is  $-a$ , or  $-b$  according as the Illumination is West or East. (See p. iv.) Let  $F_2 Y_2 + k, F_1 Y_1$ , be the vertical co-ordinates of the West and East dots, the Telescope pointing to the Nadir and Illumination West, and  $F'_2 Y'_2 + k, F'_1 Y'_1$ , the like co-ordinates for Illumination East. Then putting  $180^\circ$  for  $z$ , we shall have from the general formula,

$$\begin{aligned} -a &= d_w - F_2 Y_2 - k + F_1 Y_1 \\ -b &= d_e - F'_2 Y'_2 - k + F'_1 Y'_1. \end{aligned}$$

Again, if  $\theta$  be the constant angle which the direction of collimation makes with the line joining the dots, in one position of the instrument  $\theta = 90^\circ - a +$  the angular elevation of the West end of that line, that is,

$$\theta = 90^\circ - a + F_2 Y_2 + k - F_1 Y_1,$$

and in the reverse position  $180^\circ - \theta = 90^\circ - b + F'_2 Y'_2 + k - F'_1 Y'_1$ .

Hence we obtain a third equation,

$$0 = -a - b + F_2 Y_2 - F_1 Y_1 + F'_2 Y'_2 - F'_1 Y'_1 + 2k.$$

Putting for brevity  $Y_w$  for  $F_2 Y_2 - F_1 Y_1$ , and  $Y_e$  for  $F'_2 Y'_2 - F'_1 Y'_1$ , the three equations give

$$k = \frac{a+b}{2} - \frac{Y_w + Y_e}{2},$$

$$d_e - d_w = \frac{a-b}{2} - \frac{Y_w - Y_e}{2}.$$

Hence the general formula becomes

$$\xi = \pm \left( \frac{a-b}{2} - \frac{Y_w - Y_e}{2} \right) + \left( f_2 y_2 - f_1 y_1 + \frac{a+b}{2} - \frac{Y_w + Y_e}{2} \right) \cos z + (g_2 x_2 - g_1 x_1 + h) \sin z,$$

according as the Illumination is East or West. And if  $\xi_1$  be the value that would be obtained for  $\xi$  on the supposition of equal and cylindrical pivots,

$$\xi_1 = \pm \frac{a-b}{2} + \frac{a+b}{2} \cos z + c \sin z,$$

$c$  being the azimuth error. Hence

$$\xi - \xi_1 = \pm \frac{Y_e - Y_w}{2} + \left( f_2 y_2 - f_1 y_1 - \frac{Y_w + Y_e}{2} \right) \cos z + (g_2 x_2 - g_1 x_1 + h - c) \sin z.$$



The value of  $h - c$  is to be determined by making this equation satisfy the condition that  $\xi = \xi_1$  when the line of collimation points to the Pole. For if we conceive the azimuth error to be ascertained by two transits, one superior and the other inferior, of an imaginary star as near as we please to the Pole, whether the true value  $\xi$  or the erroneous value  $\xi_1$  be used, the line of collimation will be reduced to the position of the Pole. Hence for this position  $\xi - \xi_1 = 0$ . Consequently by putting  $-l$  for  $x$ , and  $Y_0, X_0$ , respectively, for the values of  $f_2y_2 - f_1y_1, g_2x_2 - g_1x_1$ , corresponding to  $0^\circ$  of N.P.D., the preceding equation gives, according as the Illumination is East or West,

$$h - c = \pm \frac{Y_e - Y_w}{2} \operatorname{cosec} l - \frac{Y_e + Y_w}{2} \cot l + Y_0 \cot l - X_0.$$

This expression is simpler than that given in page xxxi. of Vol. xviii., and not less exact if the values of  $Y_0$  and  $X_0$  be accurately determined. The latter supposes that micrometer measures have been taken for finding the values of  $f_2y_2 - f_1y_1$  and  $g_2x_2 - g_1x_1$  corresponding to the N.P.D. of Polaris above and below Pole. This was done in 1854 in taking the set of measures which will be presently exhibited, and the formula in Vol. xviii. is consequently used in the calculation of  $h - c$  for that year; but very nearly the same results would be obtained by using the formula above, substituting  $\frac{y' + y''}{2}$  for  $Y_0$  and  $\frac{x' + x''}{2}$  for  $X_0$ .

The constants in the expression for  $\xi - \xi_1$  being found, the correction in time for the form of the pivots is obtained by the formula,

$$\text{Correction} = \frac{\xi - \xi_1}{15} \operatorname{cosec} \text{N.P.D.}$$

The following is the account of the measures taken on April 3 and 4, 1854, for the pivot-corrections, and of the calculations by which the resulting corrections, already adduced in p. liv. of Vol. xviii. were obtained.

First the caps carrying the dots, or points for bisection, were clamped to the pivots in such positions that the vertical faces on which the dots are engraved were at *equal* distances from the shoulders of the pivots. This was done by a brass gauge provided for this purpose. The microscopes were then adjusted to see the dots distinctly, the caps were removed, and by a small plumb-line, placed in the positions of the dots, the micrometer-wire of each microscope was adjusted to verticality. The caps were then replaced and adjusted by the gauge, the straight lines engraved on the caps were placed parallel to the respective micrometer-wires by turning the Telescope, and the readings of the setting-circle for the two positions were recorded. By means of these readings and the engraved lines, the micrometer-wires could, subsequently to any displacements, be adjusted either horizontally or vertically. These arrangements were intended to prevent any errors arising from deviations of the micrometer-wires from the horizontal and vertical directions. To diminish still further the chance of error from this source, the dots were adjusted by screws provided for that purpose so that they were very near the axis of motion, and consequently described re-entering curves of small magnitude. After these adjustments the following order was observed in taking the measures.

(1) The microscopes having been adjusted to see the dots and micrometer-wires distinctly at the same time, and the micrometer-wires having been adjusted vertically in the manner above stated, horizontal measures were taken for  $5^\circ, 10^\circ, 15^\circ$ , &c. of Zenith Distance, southward and northward, and for the zenith distances of Polaris and Polaris SP. In these and all subsequent measures, the bisections with the West microscope were made by myself, and those with the East microscope by Mr Todd. The readings for bisection of the centre of the dot consisted of two readings for contacts of the wire with the dot on opposite sides, and one for coincidence of the axis of the wire with the centre of the dot. The dots are circular and their diameters are about five times the thickness of the wires. The bisection of the centre of the dot could be well judged of by the equality of the segments on the opposite sides of the wires.

During these first measures the micrometer heads were *Northward*, and the Illumination end of the axis *Eastward*. At the zenith distances  $+90^\circ, +60^\circ, +30^\circ, 0^\circ, -30^\circ, -60^\circ, -90^\circ$ , and the zenith distances of Polaris and Polaris SP, the diameters of the engraved circles were measured over by the micrometers, to determine the values of the micrometer revolutions, and to correct for variations of the values which might arise from a shifting of the instrument in the direction of the axis of motion, as had been found to happen on former occasions. To prevent this shifting in the present instance, the brass covers of the pivots were made to act as stops against the shoulders of the pivots. This expedient did not, however, altogether succeed, the dots being observed to get by degrees out of good focus. When this was noticed, the Telescope was brought back to the position in which both dots were seen distinctly, by turning it about its axis, and pushing it at the same time with the hand in the direction of the axis. A slight pressure sufficed to produce the desired effect.

(2) The horizontal measures having been taken on April 3, on the next day the micrometer heads were turned through  $90^\circ$  so as to be brought *downwards*. The microscopes are supported in screw-collars



admitting of this movement, in order that the vertical measures may be taken with the same micrometers as the horizontal. The microscopes were then adjusted to see the dots distinctly, the micrometer-wires were adjusted horizontally by the engraved straight lines and the known setting angles, and the vertical measures were then taken in the manner above stated with respect to the horizontal measures.

The instrument was then levelled in the usual way with the spirit-level, the Telescope being horizontal and looking *southward*.

(3) The Telescope being directed to the Nadir, vertical measures of the positions of the dots were taken, and the diameters of the engraved circles were measured. At the same time the Telescope-micrometer was read off for coincidence of the micrometer-wire with its image as seen with the collimating eye-piece, and for coincidence with the wire *D*.

(4) The instrument was then reversed, and the same measures were taken as those just mentioned, the Illumination being West and the Telescope still directed to the Nadir. Lastly, the levelling was performed, the Telescope pointing horizontally *northward*.

One of the caps is constructed so as to admit of being clamped to the perforated pivot, after removing in part the apparatus for the Illumination. The diameter of the circle on this cap is  $0^{\text{in}},0465$ , and the diameter of the circle on the other is  $0^{\text{in}},0458$ . The distance between the dots is  $49^{\text{in}},80$ . The constants in the formula for  $\xi - \xi_1$  were calculated as follows.

The Illumination being East, and the Telescope directed to the Nadir, the micrometer reading for the vertical ordinate of the West dot ( $Y'_2$ ) was  $11^{\text{r}},848$ , and that for the East dot ( $Y'_1$ ),  $10^{\text{r}},632$ . At the same time the measures of the diameters of the West and East circles were respectively  $12^{\text{r}},261$  and  $12^{\text{r}},657$ . From these data and the known diameters of the circles and distance between the dots in linear measure, it will be found that  $F'_2 Y'_2 - F'_1 Y'_1$ , or  $Y_e$ , is equal to  $-12^{\text{r}},05$ . After the reversion,  $Y_2 = 12^{\text{r}},298$ ,  $Y_1 = 10^{\text{r}},263$ , the diameter of the West circle =  $12^{\text{r}},424$ , and that of the East circle =  $12^{\text{r}},517$ . Hence by calculation

$$Y_w = F_2 Y_2 - F_1 Y_1 = +0^{\text{r}},58. \text{ Consequently } \frac{1}{2}(Y_e - Y_w) = -6^{\text{r}},29, \text{ and } -\frac{1}{2}(Y_e + Y_w) = +5^{\text{r}},76.$$

For the zenith distance of Polaris above Pole,  $y_2 = 12^{\text{r}},283$ ,  $y_1 = 10^{\text{r}},136$ , the diameter of the West circle =  $12^{\text{r}},245$ , and the diameter of the East circle =  $12^{\text{r}},654$ ; and for that of Polaris below Pole,  $y_2 = 12^{\text{r}},241$ ,  $y_1 = 10^{\text{r}},103$ , the West diameter =  $12^{\text{r}},253$  and the East diameter =  $12^{\text{r}},664$ . Hence the value of  $f_2 y_2 - f_1 y_1$  is  $+2^{\text{r}},23$  for the former zenith distance, and  $+2^{\text{r}},08$  for the latter. The mean between these may be taken to be the value for the Pole: that is  $Y_0 = +2^{\text{r}},16$ .

The horizontal co-ordinates  $x_2$ ,  $x_1$ , and the corresponding measures of diameters, were respectively  $10^{\text{r}},315$ ,  $10^{\text{r}},762$ ;  $12^{\text{r}},222$ ,  $12^{\text{r}},648$ , above Pole; and  $10^{\text{r}},308$ ,  $10^{\text{r}},791$ ;  $12^{\text{r}},194$ ,  $12^{\text{r}},659$ , below Pole. Hence it will be found that the value of  $g_2 x_2 - g_1 x_1$  given by the former is  $-3^{\text{r}},76$ , and that given by the latter,  $-4^{\text{r}},30$ . The mean of these, viz.  $4^{\text{r}},03$ , may be taken to be the value of  $X_0$ . The co-latitude ( $l$ ) of the Observatory being  $37^{\circ}.47'.8''$ , the following results may now be readily obtained:

$$\frac{Y_e - Y_w}{2} \operatorname{cosec} l = -10^{\text{r}},27, \quad -\frac{Y_e + Y_w}{2} \cot l = +7^{\text{r}},43, \quad Y_0 \cot l - X_0 = +6^{\text{r}},82, \quad h - c = +3^{\text{r}},98.$$

Hence the formula for Illumination East is

$$\xi - \xi_1 = -6^{\text{r}},29 + (f_2 y_2 - f_1 y_1 + 5^{\text{r}},76) \cos \alpha + (g_2 x_2 - g_1 x_1 + 3^{\text{r}},98) \sin \alpha.$$

The formula actually employed, though obtained in a different manner, was the same as this.

The following are the Horizontal and Vertical Measures of the diameters of the circles taken, as already stated, at intervals of  $30^{\circ}$  of zenith distance. As the position of the instrument was shifted from time to time, in the manner before mentioned, when the dots were seen to be out of focus, new measures of the diameters were adopted from the time of each shifting. The measures opposite to any of the subjoined zenith distances, were used for that zenith distance and all between it and the next below.

#### Horizontal Measures.

Zen. Dist. South.	West Microscope.	East Microscope.
+90 . . . . .	12,207 . . . . .	12,632
+70 . . . . .	12,203 . . . . .	12,684
+40 . . . . .	12,216 . . . . .	12,665
+10 . . . . .	12,208 . . . . .	12,694
-25 . . . . .	12,207 . . . . .	12,661
-50 . . . . .	12,226 . . . . .	12,667
-80 . . . . .	12,201 . . . . .	12,668

#### Vertical Measures.

Zen. Dist. South.	West Microscope.	East Microscope.
+85 . . . . .	12,207 . . . . .	12,694
+70 . . . . .	12,228 . . . . .	12,695
+45 . . . . .	12,239 . . . . .	12,681
+10 . . . . .	12,250 . . . . .	12,650
-25 . . . . .	12,256 . . . . .	12,634
-50 . . . . .	12,270 . . . . .	12,628
-80 . . . . .	12,277 . . . . .	12,637



The following Table contains the microscope readings for the co-ordinates  $y_2, y_1, x_2, x_1$ , and the corresponding zenith distances, together with the values of  $\xi - \xi_1$  calculated by the above formula, and the values of the pivot-correction,  $\frac{1}{13} (\xi - \xi_1) \operatorname{cosec} N.P.D.$

Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.	Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.
0	r.	r.	r.	r.	''	''	0	r.	r.	r.	r.	''	''
+ 90	12,096	10,405	10,652	10,340	+ 5,60	+ 0,472	- 10	12,530	10,386	10,334	10,554	+ 0,96	+ 0,137
85	12,165	10,425	10,654	10,356	+ 5,50	0,436	15	12,518	10,354	10,313	10,573	+ 0,95	0,164
80	12,179	10,395	10,653	10,353	+ 5,66	0,427	20	12,477	10,323	10,279	10,591	+ 0,59	0,129
75	12,177	10,354	10,650	10,358	+ 5,68	0,411	25	12,432	10,290	10,276	10,625	+ 0,20	0,060
70	12,173	10,301	10,629	10,371	+ 5,39	0,377	30	12,371	10,230	10,296	10,682	+ 0,08	0,039
65	12,162	10,239	10,643	10,366	+ 5,92	0,405	35	12,303	10,161	10,299	10,753	+ 0,14	0,192
60	12,125	10,144	10,614	10,348	+ 6,09	0,410	36,3	12,283	10,136	10,315	10,762	+ 0,03	0,078
55	12,078	10,061	10,562	10,292	+ 6,30	0,420	39,3	12,241	10,103	10,308	10,791	- 0,01	+ 0,026
50	12,085	10,000	10,500	10,228	+ 6,79	0,453	40	12,231	10,094	10,308	10,801	+ 0,02	- 0,034
45	12,124	10,014	10,459	10,209	+ 6,51	0,437	45	12,188	10,089	10,272	10,808	- 0,36	+ 0,191
40	12,158	10,031	10,467	10,232	+ 6,41	0,437	50	12,177	10,109	10,218	10,757	- 1,02	0,321
35	12,218	10,090	10,463	10,285	+ 5,61	0,392	55	12,177	10,154	10,154	10,669	- 2,10	0,473
30	12,296	10,184	10,472	10,356	+ 4,59	0,331	60	12,191	10,234	10,098	10,633	- 2,73	0,481
25	12,376	10,229	10,479	10,411	+ 4,41	0,331	65	12,229	10,333	10,059	10,587	- 3,55	0,517
20	12,423	10,285	10,460	10,457	+ 3,57	0,281	70	12,255	10,382	10,039	10,580	- 3,78	0,473
15	12,464	10,321	10,468	10,485	+ 3,19	0,267	75	12,269	10,446	10,023	10,558	- 4,34	0,478
10	12,495	10,356	10,454	10,504	+ 2,61	0,235	80	12,258	10,498	10,006	10,559	- 4,46	0,442
+ 5	12,528	10,378	10,429	10,520	+ 2,28	0,224	85	12,258	10,532	10,009	10,568	- 4,58	0,416
0	12,543	10,406	10,392	10,537	+ 1,62	0,176	- 90	12,246	10,563	10,003	10,572	- 4,56	+ 0,385
- 5	12,542	10,392	10,362	10,548	+ 1,42	+ 0,175							

The above micrometer readings are all means of three readings taken as already stated, with the exception of the vertical readings for the zenith distances from  $+90^\circ$  to  $+45^\circ$  inclusive, which are single readings for bisections of the dots. A first set for these zenith distances was taken when the dots were not well in focus, on which account a second set was taken with more particular attention to the transverse adjustment of the instrument, and the latter, which differed little from the first, have been preferred. As the zeros of the micrometer readings are arbitrary, for facility of calculation all the West and East vertical readings were diminished by  $12^r,300$  and  $10^r,300$  respectively, and all the West and East horizontal readings by  $10^r,300$  and  $10^r,500$ .

On April 6, 1854, analogous operations were gone through to find the effect of the forms of the pivots for the position of the instrument in which the Illumination is *West*. After the preliminary adjustments already described were made, there were taken, first, the readings for the horizontal co-ordinates of the dots; then after changing the directions of the micrometer-heads, the readings for the vertical co-ordinates, inclusive of those corresponding to the Nadir Point, which were taken last; and lastly, after reversing the instrument, the readings of the vertical co-ordinates for the Nadir Point, the Illumination being *East*. The microscope readings for calculating, first, the constants in the formula for  $\xi - \xi_1$ , then the values of this quantity for different zenith distances, are subjoined, together with the calculated values of  $\xi - \xi_1$  and the resulting pivot-corrections. It is not necessary to particularize the calculations farther, the formulæ employed being the same as those given above, by which the results may be readily verified. The following formula was obtained for  $\xi - \xi_1$ ,

$$\xi - \xi_1 = -2'',65 + (f_2 y_2 - f_1 y_1 + 0'',73) \cos z + (g_2 x_2 - g_1 x_1 - 6'',55) \sin z.$$

The measures of the diameters of the circles engraved on the caps, for converting the micrometer readings into arc, were the following.

#### Horizontal Measures.

Zen. Dist. South.	West Microscope.	East Microscope.
+ 90	12,466	12,458
60	12,442	12,504
30	12,433	12,477
+ 10	12,462	12,438
- 30	12,412	12,542
36,3	12,400	12,506
39,3	12,396	12,521
50	12,407	12,518
75	12,419	12,523

#### Vertical Measures.

Zen. Dist. South.	West Microscope.	East Microscope.
+ 180	12,392	12,568
85	12,382	12,507
70	12,420	12,513
40	12,406	12,525
10	12,417	12,534
- 20	12,431	12,543
36,3	12,416	12,525
39,3	12,442	12,535
50	12,411	12,512
80	12,418	12,507
- 180	12,698	12,274



The last vertical measures for the Nadir Point were taken after the reversion of the instrument. The factors  $f_2, f_1, g_2, g_1$ , obtained from the above measures are used for the corresponding zenith distances. For any other zenith distance the values next preceding were adopted, with the exception of the factors for the zenith distance  $-35^\circ$ , which are the same as those for  $-36^\circ, 3$ .

The subjoined Table includes the vertical measures for the Nadir Point before and after reversion; in every other respect it is analogous to the foregoing one for Illumination East.

Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.	Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.
0	r.	r.	r.	r.	"	s.	0	r.	r.	r.	r.	"	s.
+ 180	10,448	10,259					- 10	11,391	10,953	9,324	10,873	- 1,25	- 0,179
90	10,613	10,666	9,583	11,338	- 5,34	- 0,450	15	11,379	10,915	9,286	10,855	- 0,85	- 0,146
85	10,635	10,675	9,598	11,329	- 5,49	- 0,435	20	11,356	10,875	9,260	10,846	- 0,60	- 0,131
80	10,651	10,681	9,621	11,317	- 5,43	- 0,409	25	11,326	10,820	9,242	10,843	- 0,21	- 0,063
75	10,665	10,674	9,646	11,313	- 5,38	- 0,389	30	11,274	10,750	9,245	10,836	- 0,14	- 0,069
70	10,663	10,669	9,651	11,290	- 5,39	- 0,377	35	11,199	10,667	9,237	10,842	- 0,05	- 0,069
65	10,660	10,629	9,654	11,268	- 5,29	- 0,362	36,3	11,179	10,644	9,234	10,850	+ 0,05	+ 0,130
60	10,629	10,610	9,635	11,249	- 5,65	- 0,380	39,3	11,146	10,604	9,250	10,855	- 0,05	+ 0,130
55	10,612	10,574	9,569	11,179	- 5,82	- 0,388	40	11,131	10,599	9,241	10,843	- 0,22	+ 0,379
50	10,611	10,570	9,482	11,108	- 6,30	- 0,420	45	11,070	10,547	9,217	10,837	- 0,28	+ 0,149
45	10,643	10,597	9,415	11,055	- 6,67	- 0,448	50	11,055	10,510	9,136	10,794	+ 0,28	- 0,088
40	10,714	10,632	9,408	11,017	- 6,15	- 0,420	55	11,059	10,508	9,014	10,730	+ 0,95	- 0,214
35	10,827	10,699	9,452	11,015	- 5,31	- 0,371	60	11,121	10,554	8,919	10,691	+ 1,73	- 0,305
30	10,951	10,791	9,490	11,038	- 4,92	- 0,354	65	11,178	10,563	8,853	10,643	+ 2,18	- 0,318
25	11,065	10,843	9,506	11,039	- 4,07	- 0,305	70	11,202	10,612	8,798	10,637	+ 2,56	- 0,320
20	11,149	10,913	9,497	11,040	- 4,03	- 0,318	75	11,227	10,616	8,753	10,615	+ 2,79	- 0,308
15	11,230	10,951	9,493	11,019	- 3,40	- 0,285	80	11,221	10,616	8,723	10,612	+ 2,93	- 0,291
10	11,293	10,971	9,458	10,986	- 2,82	- 0,254	85	11,225	10,602	8,691	10,610	+ 3,13	- 0,284
+ 5	11,340	10,986	9,425	10,962	- 2,41	- 0,237	- 90	11,200	10,587	8,669	10,616	+ 3,21	- 0,271
0	11,374	10,993	9,396	10,932	- 2,76	- 0,300							
- 5	11,388	10,973	9,359	10,900	- 1,56	- 0,192	- 180	10,079	10,611				

Each of the micrometer readings is the mean of three readings, one for bisection of the dot with the wire, and two for contacts of the wire with the dot on opposite sides. For the nadir direction, before and after the reversion, two sets of three readings were taken.

On April 12, 1854, two additional series of measures were recorded, one for Illumination East and the other for Illumination West, chiefly to confirm the preceding results, as I had a suspicion, (which, however, was not subsequently verified,) that the screws for adjusting the position of the dot at the non-illuminated end of the axis, did not bear upon the adjustable piece, and that the dot was consequently liable to unsteadiness. These measures were taken at intervals of  $10^\circ$  of zenith distance, and with single bisections of the dots by the micrometer wires, excepting that when the Telescope was directed to the nadir the bisections were once repeated. The following are the formulæ for  $\xi - \xi_1$ .

Illumination East,  $\xi - \xi_1 = + 11'',96 + (f_2 y_2 - f_1 y_1 - 3'',84) \cos z + (g_2 x_2 - g_1 x_1 + 3'',73) \sin z$ .

Illumination West,  $\xi - \xi_1 = - 11,96 + (f_2 y_2 - f_1 y_1 - 3'',84) \cos z + (g_2 x_2 - g_1 x_1 - 4'',38) \sin z$ .

The data for calculating the constants of these formulæ and the values of  $f_2 y_2, f_1 y_1, g_2 x_2, g_1 x_1$  are given below, together with the resulting values of  $\xi - \xi_1$  and the pivot-corrections.

#### 1°. Measures of the diameters of the circles, Illumination East.

<i>Horizontal Measures.</i>					<i>Vertical Measures.</i>				
Zen. Dist. South.	West Microscope.	East Microscope.			Zen. Dist. South.	West Microscope.	East Microscope.		
0	r.	r.			0	r.	r.		
+ 90	.....	12,198	.....	12,674	+ 90	.....	12,244	.....	12,666
60	.....	12,199	.....	12,703	60	.....	12,225	.....	12,688
+ 30	.....	12,205	.....	12,713	+ 30	.....	12,216	.....	12,700
0	.....	12,199	.....	12,691	0	.....	12,223	.....	12,676
- 30	.....	12,196	.....	12,708	- 30	.....	12,224	.....	12,678
36,3	....	12,202	.....	12,716	36,3	....	12,230	.....	12,667
39,3	....	12,201	.....	12,694	39,3	....	12,238	.....	12,687
60	.....	12,159	.....	12,708	60	.....	12,225	.....	12,684
- 90	.....	12,187	.....	12,699	90	.....	12,243	.....	12,665
					- 180	.....	12,225	.....	12,680



## 2°. Measures of the diameters of the circles, Illumination West.

<i>Horizontal Measures.</i>			<i>Vertical Measures.</i>		
Zen. Dist. South.	West Microscope.	East Microscope.	Zen. Dist. South.	West Microscope.	East Microscope.
+ 90	12,359	12,506	+ 180	12,362	12,548
60	12,402	12,499	90	12,363	12,556
30	12,391	12,489	60	12,393	12,509
0	12,387	12,512	+ 30	12,391	12,490
- 30	12,382	12,509	0	12,395	12,460
36,3	12,406	12,498	- 30	12,399	12,483
39,3	12,406	12,477	36,3	12,411	12,490
60	12,405	12,501	39,3	12,407	12,485
- 90	12,380	12,490	60	12,390	12,502
			- 90	12,405	12,494

The foregoing measures are used for the zenith distances opposite to them, and the measures adopted for any other zenith distance in the subjoined Table are the same as for the zenith distance above which is the nearest to it.

## 3°. Measures of vertical and horizontal co-ordinates of the dots.

Illumination East.							Illumination West.						
Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.	Zen. Dist. South.	$y_2$	$y_1$	$x_2$	$x_1$	$\xi - \xi_1$	Pivot- correction.
0	r.	r.	r.	r.	"	s.	0	r.	r.	r.	r.	"	s.
+ 90	11,199	10,272	10,612	12,231	+ 6,32	+ 0,533	+ 180	10,374	10,392				
80	11,171	10,362	10,607	12,241	+ 6,34	+ 0,478	90	11,257	10,473	9,851	10,730	- 5,05	- 0,426
70	11,110	10,408	10,587	12,221	+ 6,21	+ 0,435	80	11,354	10,429	9,820	10,732	- 5,18	- 0,390
60	11,010	10,410	10,548	12,145	+ 6,18	+ 0,416	70	11,407	10,332	9,758	10,717	- 4,97	- 0,348
50	10,933	10,394	10,458	11,948	+ 7,02	+ 0,468	60	11,395	10,244	9,664	10,691	- 4,93	- 0,332
40	10,979	10,576	10,424	11,851	+ 6,10	+ 0,416	50	11,385	10,176	9,421	10,597	- 5,74	- 0,383
30	11,094	10,820	10,487	11,856	+ 4,77	+ 0,344	40	11,464	10,212	9,260	10,550	- 5,76	- 0,393
20	11,185	11,000	10,515	11,808	+ 3,86	+ 0,304	30	11,686	10,327	9,260	10,596	- 3,92	- 0,282
+ 10	11,237	11,110	10,530	11,712	+ 2,84	+ 0,256	20	11,838	10,446	9,186	10,651	- 3,33	- 0,262
0	11,259	11,171	10,534	11,583	+ 1,94	+ 0,211	+ 10	11,924	10,496	9,087	10,672	- 2,26	- 0,203
- 10	11,240	11,163	10,526	11,454	+ 1,08	+ 0,154	0	11,933	10,539	8,952	10,661	- 1,89	- 0,206
20	11,191	11,071	10,526	11,354	+ 0,82	+ 0,179	- 10	11,867	10,512	8,830	10,656	- 1,28	- 0,183
30	11,076	10,915	10,582	11,289	+ 0,09	+ 0,044	20	11,761	10,442	8,736	10,676	- 0,33	- 0,072
36,3	11,000	10,779	10,628	11,282	+ 0,10	+ 0,260	30	11,600	10,346	8,701	10,720	+ 0,24	+ 0,118
39,3	10,955	10,719	10,646	11,272	- 0,12	+ 0,313	36,3	11,443	10,280	8,694	10,761	+ 0,02	+ 0,052
40	10,954	10,700	10,646	11,274	+ 0,09	- 0,155	39,3	11,378	10,250	8,701	10,779	- 0,02	+ 0,052
50	10,919	10,614	10,610	11,108	- 1,15	+ 0,362	40	11,348	10,234	8,701	10,781	- 0,10	+ 0,172
60	10,980	10,609	10,514	10,860	- 2,37	+ 0,418	50	11,176	10,176	8,615	10,778	+ 0,50	- 0,158
70	11,068	10,618	10,491	10,735	- 4,13	+ 0,516	60	11,180	10,260	8,415	10,658	+ 1,76	- 0,310
80	11,137	10,560	10,476	10,679	- 4,07	+ 0,404	70	11,200	10,374	8,325	10,591	+ 2,27	- 0,284
90	11,160	10,462	10,487	10,656	- 4,37	+ 0,369	80	11,131	10,428	8,310	10,592	+ 2,68	- 0,266
- 180	11,120	9,582					- 90	11,035	10,465	8,316	10,577	+ 2,71	- 0,229

To form a list of pivot-corrections to be applied in the reduction of the transits, the results obtained on April 3—6 and April 12, were combined in the following manner. First, values for 85°, 75°, &c. of zenith distance were obtained for the latter day, by interpolating so that the difference between the interpolated value and that of April 3—6 was made equal to the mean of the differences for the next preceding and next following zenith distances. The adopted pivot-corrections are the means of the values for the two days. It is, however, to be remarked that these corrections were calculated on the supposition that the level error is  $\frac{a+b}{2}$ , while the level error employed in the reduction of the transits is virtually that immediately given

by the spirit-level. But it is shewn in pages iv. and v. that  $L_w = l_w - 2'',72$  and  $L_e = l_e - 0'',02$ . Hence the foregoing pivot-corrections must be *increased* by the effects on the reduction to the meridian of a level error + 2'',72 for Illumination West, and + 0'',02 for Illumination East. Since the correction in time due to any increment  $\Delta b$  of level error is  $+\frac{\Delta b}{15}$  cosec. of co-lat., it will be found that the corrections in this

instance are  $+0^s,332$  for Illumination West, and  $+0^s,002$  for Illumination East. These quantities having been applied, and the argument having been changed, for convenience of calculation, to N.P.D. by simple interpolation, the following results were finally obtained.

N.P.D.	Correction Illum. East.	Correction Illum. West.	N.P.D.	Correction Illum. East.	Correction Illum. West.
$-3,4^*$ .....	$-0,03$ .....	$+0,56$	70 .....	$+0,36$ .....	0,00
-1,5 .....	$+0,17$ .....	$+0,42$	75 .....	$+0,40$ .....	-0,04
+1,5 .....	$+0,17$ .....	$+0,42$	80 .....	$+0,43$ .....	-0,08
3,4* .....	$+0,15$ .....	$+0,27$	85 .....	$+0,45$ .....	-0,09
30 .....	$+0,17$ .....	$+0,16$	90 .....	$+0,45$ .....	-0,05
35 .....	$+0,19$ .....	$+0,17$	95 .....	$+0,42$ .....	-0,03
40 .....	$+0,21$ .....	$+0,10$	100 .....	$+0,42$ .....	-0,02
45 .....	$+0,24$ .....	$+0,12$	105 .....	$+0,41$ .....	-0,02
50 .....	$+0,26$ .....	$+0,09$	110 .....	$+0,42$ .....	-0,04
55 .....	$+0,29$ .....	$+0,06$	115 .....	$+0,45$ .....	-0,06
60 .....	$+0,31$ .....	$+0,05$	120 .....	$+0,46$ .....	-0,08
65 .....	$+0,34$ .....	$+0,04$	125 .....	$+0,48$ .....	-0,10

\* The values for the N.P.D.  $-3^s,4$  and  $+3^s,4$  of  $\delta$  Ursæ Minoris below and above Pole, were obtained by interpolation.

The above are results of calculations which were in a great measure independent of those by which the results given in p. liv. of Vol. xviii. were obtained. It will be found that the corrections for Illumination East deduced by the two calculations, excepting interpolated values, do not differ by more than  $0^s,01$ . The case is, however, not the same with respect to the corrections for Illumination West. The discordance is owing to the calculations having originally been made on the supposition that the collimation errors of  $D$  used in the reduction of the transits would be, as in 1850 and 1851,  $L_w - a$  and  $L_e - b$ , which, in fact, were employed in the first instance, but subsequently the corrections  $+2'',72$  and  $+0'',02$  were added, and by oversight the corresponding alterations of the pivot-corrections were omitted. This error, which was not observed till after the observations of 1852 were printed, has no perceptible effect on the transits taken with the Illumination East: its effect on those in the reverse position of the instrument may be estimated as follows. It has been found by repeated trials that although the pivot-corrections obtained in different years differ from each other, owing mainly to unavoidable errors in the determination of the constants of the formula for  $\xi - \xi_1$ , the law of the corrections remains the same, and that within the limits of  $55^\circ$  and  $120^\circ$  of N.P.D. the differences between the values for one year and those for another near it are nearly constant. Now a constant error has no effect on the determination of the R.A. of stars, being equivalent to a difference of meridians, and, if it be a small fraction of a second, will not appreciably affect the R.A. of moving bodies, producing only a slight error of epoch. Consequently if we subtract from the values used, those which were obtained by the measures of 1854, the differences between the several remainders and the *mean* remainder may be regarded as the quantities by which the transits are affected. The calculation of these quantities is here added for the N.P.D. that are included within the limits of the observations.

N.P.D.	Correction used in 1852.	Correction of 1854.	Excess of former.	Excess minus mean Excess.	N.P.D.	Correction used in 1852.	Correction of 1854.	Excess of former.	Excess minus mean Excess.
$-3,4$ .....	$+0,50$ .....	$+0,56$ .....	$-0,06$		80 .....	$+0,10$ .....	$-0,08$ .....	$+0,18$ .....	$-0,03$
-1,5 .....	$+0,45$ .....	$+0,42$ .....	$+0,03$		85 .....	$+0,12$ .....	$-0,09$ .....	$+0,21$ .....	0,00
+1,5 .....	$+0,45$ .....	$+0,42$ .....	$+0,03$		90 .....	$+0,17$ .....	$-0,05$ .....	$+0,22$ .....	$+0,01$
+3,4 .....	$+0,41$ .....	$+0,27$ .....	$+0,14$		95 .....	$+0,20$ .....	$-0,03$ .....	$+0,23$ .....	$+0,02$
55 .....	$+0,18$ .....	$+0,06$ .....	$+0,12$ .....	-0,09	100 .....	$+0,21$ .....	$-0,02$ .....	$+0,23$ .....	$+0,02$
60 .....	$+0,17$ .....	$+0,05$ .....	$+0,12$ .....	-0,09	105 .....	$+0,24$ .....	$-0,02$ .....	$+0,26$ .....	$+0,05$
65 .....	$+0,20$ .....	$+0,04$ .....	$+0,16$ .....	-0,05	110 .....	$+0,24$ .....	$-0,04$ .....	$+0,28$ .....	$+0,07$
70 .....	$+0,17$ .....	0,00 .....	$+0,17$ .....	-0,04	115 .....	$+0,24$ .....	$-0,06$ .....	$+0,30$ .....	$+0,09$
+75 .....	$+0,12$ .....	$-0,04$ .....	$+0,16$ .....	-0,05	120 .....	$+0,26$ .....	$-0,08$ .....	$+0,34$ .....	$+0,13$

The mean excess, excluding the circumpolar stars, is  $+0^s,21$ . The effect of the error on the transits is the same as if the R.A. of the fundamental stars had been altered by the small quantities in the last columns.

After having found by various determinations that the differences between the results obtained in different years could not be wholly due to actual changes of the forms of the pivots, but must in a great measure be ascribed to incidental errors in the measured co-ordinates for the nadir and polar directions,



(the effect of which is the more sensible on account of the smallness of the arc between the pole and the zenith), I calculated the pivot-corrections on a different principle. The corrections adopted for any year are mean values of  $\xi - \xi_1$ , deduced from the determinations of three years at least, and in such a manner as to include very approximately small changes proportional to the time. For 1853 the values adopted for Illumination East are simply the means of  $\xi - \xi_1$  for 1850, 1854, and 1856, there being no intermediate determinations, and the mean epoch being considered sufficiently near to 1853. For Illumination West the following process was adopted, no measures for that position of the instrument having been taken in 1850. As the pivot-corrections are due to *differences* of form and magnitude of the two pivots, changes of their values must arise from *unequal* wearing of the pivots. Assuming that the *same* pivot is always most worn, it will follow that the corrections for Illumination East and Illumination West are equal with opposite signs, or at least that their sums are constant quantities, the instrument being used in the same manner, and about as much, in one position as in the other. Mean values of these constant sums were accordingly deduced from the results of measures taken in the years 1854, 1856, 1857, and 1858, and the corrections for Illumination East, obtained as above stated, were then subtracted from them. The remainders are the corrections adopted for Illumination West.

For the year 1854, the corrections for Illumination East are the means of those obtained in 1850, 1854, and 1858, and the corrections for Illumination West are the results of subtracting these from the sums above mentioned.

The following Table contains the quantities which are used in the calculation of the pivot-corrections adopted in 1853 and 1854. The details of the measures taken subsequently to 1854 will be given in another Volume.

N.P.D.	Correction, Illumination East.					Correction, Illumination West.			
	Year 1850.	1854.	1856.	1857.	1858.	1854.	1856.	1857.	1858.
-3,4	+0,18	+0,06	+0,24	-0,21	+0,12	+0,19	+0,32	+0,06	+0,09
-1,5	+0,07	+0,03	-0,02	+0,04	+0,05	+0,13	+0,38	+0,21	+0,04
0	-0,19	+0,05	-0,01	0,00	0,00	+0,13	+0,38	+0,21	0,00
+1,5	-0,29	+0,08	-0,01	+0,04	-0,03	+0,13	+0,38	+0,21	+0,05
3,4	-0,35	+0,10	-0,22	-0,20	-0,08	+0,03	+0,06	-0,13	+0,12
55	+0,13	+0,27	+0,32	+0,18	+0,29	-0,30	-0,24	-0,25	-0,26
60	+0,16	+0,30	+0,39	+0,19	+0,30	-0,31	-0,30	-0,25	-0,28
65	+0,19	+0,33	+0,36	+0,21	+0,33	-0,33	-0,29	-0,28	-0,30
70	+0,23	+0,36	+0,39	+0,24	+0,37	-0,36	-0,34	-0,31	-0,32
75	+0,26	+0,41	+0,44	+0,29	+0,42	-0,39	-0,37	-0,36	-0,35
80	+0,29	+0,44	+0,47	+0,32	+0,45	-0,43	-0,39	-0,38	-0,37
85	+0,31	+0,44	+0,50	+0,32	+0,47	-0,41	-0,39	-0,36	-0,37
90	+0,31	+0,44	+0,50	+0,32	+0,46	-0,41	-0,37	-0,33	-0,35
95	+0,29	+0,42	+0,47	+0,29	+0,44	-0,38	-0,34	-0,31	-0,32
100	+0,27	+0,41	+0,45	+0,29	+0,44	-0,37	-0,33	-0,30	-0,31
105	+0,27	+0,39	+0,46	+0,29	+0,45	-0,36	-0,34	-0,27	-0,32
110	+0,29	+0,39	+0,49	+0,29	+0,46	-0,38	-0,35	-0,31	-0,33
115	+0,31	+0,42	+0,52	+0,31	+0,49	-0,40	-0,35	-0,32	-0,35
+120	+0,32	+0,43	+0,55	+0,33	+0,52	-0,42	-0,39	-0,34	-0,38

From the quantities given in this Table the following lists of pivot-corrections, which are used for the years 1853 and 1854, were calculated in the manner above stated.

<i>Illumination East.</i>			<i>Illumination West.</i>		
N.P.D.	Correction, 1853.	Correction, 1854.	N.P.D.	Correction, 1853.	Correction, 1854.
- 3,4	+ 0,16	+ 0,12	- 3,4	+ 0,06	+ 0,10
- 1,5	+ 0,03	+ 0,05	- 1,5	+ 0,19	+ 0,17
+ 1,5	- 0,07	- 0,08	+ 1,5	+ 0,28	+ 0,29
3,4	- 0,16	- 0,11	3,4	+ 0,08	+ 0,03
55	+ 0,24	+ 0,23	55	- 0,24	- 0,23
60	+ 0,28	+ 0,25	60	- 0,27	- 0,24
65	+ 0,29	+ 0,28	65	- 0,28	- 0,27
70	+ 0,33	+ 0,32	70	- 0,32	- 0,31
75	+ 0,37	+ 0,36	75	- 0,35	- 0,34
80	+ 0,40	+ 0,39	80	- 0,37	- 0,36
85	+ 0,42	+ 0,41	85	- 0,37	- 0,36
90	+ 0,42	+ 0,40	90	- 0,36	- 0,34
95	+ 0,39	+ 0,38	95	- 0,32	- 0,31
100	+ 0,38	+ 0,37	100	- 0,31	- 0,30
105	+ 0,37	+ 0,37	105	- 0,30	- 0,30
110	+ 0,39	+ 0,38	110	- 0,32	- 0,31
115	+ 0,42	+ 0,41	115	- 0,34	- 0,33
+ 120	+ 0,43	+ 0,42	+ 120	- 0,36	- 0,35

All the concluded times of transit are corrected for the forms of the pivots previous to the application of other instrumental errors.

*Collimation Error.* As the calculation of the pivot-corrections was made on the supposition that the collimation error is  $\pm \frac{1}{2}(a-b)$ , and the level error  $\frac{1}{2}(a+b)$ ,  $a$  and  $b$  having the significations stated in p. iv, these values must also be used in the reductions to the meridian. In 1853 the value of  $a-b$  was not obtained by measures of  $a$  and  $b$  taken before and after a reversion of the Transit, but was inferred from a measure of one of these quantities combined with the level error given contemporaneously by the spirit-level, the constant differences  $L_w-l$  and  $L_e-l$  being taken into account. These differences were, in the first instance, assumed to be  $-2'',72$  and  $-0'',02$ , as given in p. v. and the concluded error of collimation of the mean of the wires, the intervals remaining the same, was accordingly the same as at the end of 1852. But subsequently it was discovered that the determinations of level error by the collimating eye-piece were affected with error in consequence of the measures having been taken while the observer was standing on the *West* side of the upper half of the Telescope tube, the heat of his body having the effect of perceptibly throwing the tube *Eastward*. After it was fully ascertained that this was a source of error, in August of 1856 a new stage was erected, which gave the observer a position to the *North* of the Telescope, and at the same time the illuminating lamp was placed due *South*. It was not, however, till 1858 that measures were expressly taken to determine the numerical difference between the level errors obtained in the two positions. On Oct. 18 of that year I observed as follows, the Illumination end of the axis being West.

Mean of 3 micrometer readings, observer to	West	10,241
..... 6 .....	North	10,292
..... 5 .....	West	10,241
..... 6 .....	North	10,291
..... 6 .....	West	10,237

Sufficient intervals were allowed between the consecutive sets for the readings to become steady, the observer retaining his position some time before reading off. The image of the micrometer-wire was placed midway between that wire and the wire *D*, the latter, as



seen in the collimating eye-piece, which inverts, being nearest the micrometer-head. Hence if  $r_1$ ,  $r_2$  be the respective micrometer readings when the observer is to the West and to the North of the Telescope, and  $c$  be the reading for coincidence with  $D$ , the values of  $a$  are respectively  $-\frac{3}{4}(r_1-c)$  and  $-\frac{3}{4}(r_2-c)$ . The excess of value for the position West of the Telescope is therefore  $\frac{3}{4}(r_2-r_1)$ . The mean value of  $r_2-r_1$  from the measures above is 0,052, and consequently  $\frac{3}{4}(r_2-r_1) = +0,039 = +0'',67$ , 1' being equal to 17'',06. Other results a little larger were obtained by my assistants at the same time; but as the measures for collimation error in 1853 were taken by myself, the above result is used in the calculation of the adopted level errors, and is assumed to apply as well to Illumination East as to Illumination West.

As it thus appears that the level error as found by the collimating eye-piece is too great by  $+0'',67$ , the values of  $L_w-l$  and  $L_e-l$  before adopted are too small by this quantity, and the correct values are therefore  $-2'',05$  and  $+0'',65$ . Hence taking into account the reduction to the mean of the wires,  $\pm 0'',15$  according as the Illumination is West or East, and  $-0'',18$ , the correction for diurnal aberration, we obtain

Correction of Collimation, Illumination West, .....  $L_w-a+2'',02$ ,

Correction of Collimation, Illumination East, .....  $L_e-b-0'',98$ ,

the values of  $a$  and  $b$  corrected by  $-0'',67$  being supposed to be used. But if the values of these quantities as immediately given by measures affected by the heat of the observer's body be employed, the above formulæ became  $L_w-a+2'',69$  and  $L_e-b-0'',31$ .

The formula for Illumination West being applied in the case of the measures taken on January 18, the details of which have already been given in page viii. the concluded error of collimation becomes  $-18'',16$ . This differs from the result there obtained only by reason of the small correction  $+0'',04$  (mentioned at the beginning of page v.), which is not required in 1853. In fact, as the source of error above considered is assumed to change  $a$  and  $b$  equally, it has no effect on the collimation error. The value  $-18'',2$  is used from the beginning of the year to Jan. 18. On that day after the result of the measures was known, the wire-frame was shifted to diminish the collimation error, and a new value of  $a$  obtained. The mean of six readings taken with equal spaces between the micrometer-wire, the image of  $D$ ,  $D$  itself, and the image of the micrometer-wire, was 23'',295, and the mean of eight readings for coincidence with  $D$  was 24'',183. Hence the inferred reading for coincidence of  $D$  with its image is 23'',961. Two actual coincidence readings gave 23'',970, and the mean of all is 23'',963. Consequently  $a = +0'',220 = +3'',75$ . The previous value of  $a$  being  $+16'',86$ , it follows that the collimation error was corrected by  $+13'',11$ , and the result was  $-5'',05$ . The value  $-5'',0$  is used from Jan. 18, after the shifting of the wire-frame.

On May 21, I observed as follows for the determination of collimation error. The new mercury trough, used for the first time on May 5 for finding the Zenith Point of the Mural Circle, was employed on this occasion. The trough was made of copper amalgamated with mercury on the interior, and the surface of the mercury in the trough could be readily cleared by moving across it the straight edge of a plate of copper also amalgamated. The depth of the mercury was about one-thirtieth of an inch, the effect of capillary action being in a great measure got rid of, and it was expected that this small depth would greatly contribute to the stability of the fluid. On May 21 the images of the wires were obscure and waving, which may be attributed to one of the shutters, which was out of order, being left open. A gradual change of the readings was also noticed, which it was thought might be produced by the heat of the lamp, and on this account the lamp was afterwards held on the North, or the South, side of the Telescope. I have



reason from subsequent experience to say, that this change was caused by heat from the observer. The micrometer-wire, the wire  $D$ , and their images being arranged as on Jan. 18, the mean of nine readings was  $23^r,684$ , and on repeating the measures when the images had become more steady, the mean of seven readings was  $23^r,643$ . As at the same time the mean of eight readings for coincidence with  $D$  was  $24^r,172$ , it will be found by calculating as before that the value of  $a$  by the first set is  $+2'',08$ , and by the other  $+2'',25$ .

Not being satisfied with the above measures, I took others on May 22, at  $23^h$ , in the following manner. The new mercury trough was made use of, but instead of lamp-light, the images were reflected by day-light admitted by opening the middle south shutters, all the other shutters of the room being closed. The reflected images were seen sufficiently well. The same change of micrometer readings was noticed as on the previous day. The mean of ten readings, with the same arrangement of the wires and images as before, was  $23^r,658$ , and the mean of six for coincidence with  $D$  was  $24^r,179$ . Hence  $a = +2'',22$ .

Again, on May 23 at  $22\frac{1}{2}^h$ , the measures were repeated with the old mercury trough, and day-light illumination. The mean of eight readings for the position of equal intervals was  $23^r,671$ , and the mean of six for coincidence with  $D$  was  $24^r,192$ , giving  $+2'',22$  for the value of  $a$ . Immediately after these measures, another trial was made with the new trough, at the commencement of which it was remarked that a good and steady image of the micrometer-wire was formed in a position quite different from that in the trial with the old trough. On tapping the trough repeatedly, the image settled by degrees into the position indicated by the reading  $23^r,665$ , which is the mean of eight readings, affected as usual by the position of the observer. This with the above reading for coincidence with  $D$  gives  $+2'',25$  for the value of  $a$ .

Finally, on the same day, measures were taken with the old trough, which gave  $23^r,684$  as the result of twelve readings for the position of equal intervals, and consequently  $+2'',17$  for the value of  $a$ . The mean of this and the preceding four determinations is  $+2'',19$ , which is adopted for the calculation of collimation error. By substitution in the formula for Illumination West, and putting  $-6'',04$  for  $L_w$ , this being the mean of three levellings taken on May 21, 23 and 24, the result is  $-5'',51$ , which, to the nearest tenth of a second, is used from March 29.

The use of the new trough was discontinued after it was found that the mercury in it did not readily take a gravity surface.

August 22,  $4\frac{1}{2}^h$ . I determined the collimation error as follows. A small speck on one of the horizontal wires was bisected four times with the micrometer-wire, and as many times with its image, and the mean of the eight readings was  $24^r,151$ , which is taken to be the reading for coincidence of the micrometer-wire with its image. By six trials the reading for coincidence with  $D$  was  $24^r,192$ . Hence  $a = +0'',70$ . And as by levelling at  $2^h$  of the same day  $L_w = -7'',46$ , it follows that the concluded error of collimation  $= -7'',46 - 0'',70 + 2'',69 = -5'',47$ . After this determination the level error was altered by turning the adjusting screws, and on Aug. 22 at  $23^h$ , it was ascertained to be  $+1'',30$ . At the same time the wire-frame was shifted through  $0^r,382$  to diminish the collimation error. It was then found that the micrometer reading for equal intervals as on Jan. 18 was  $23^r,270$  by seven trials, and for coincidence with  $D$ ,  $23^r,791$  by six trials. Hence  $a = +2'',22$ , and the concluded error of collimation  $= +1'',30 - 2'',22 + 2'',69 = +1'',77$ . This value is used from Aug. 23.

Sept. 22,  $1^h$ . After the insertion of the new wires mentioned in p. xxxiv. the collimation error was again determined. The mean of six readings for coincidence of the micrometer-wire with its image was  $15^r,906$ , and of the same number for coincidence with  $D$ ,



16'.677; so that  $a = +13''.15$ . By the Table in p. xxxiv. for the new wires, it appears that when the Illumination is East,  $D$  is more eastward than the mean of the wires by  $0''.067$ , or  $1''.00$ . Hence the reduction to the mean of the wires is  $\mp 1''.00$  according as the Illumination is East or West, and the formulæ for the concluded error of collimation become  $L_e - b + 0''.84$  and  $L_w - a + 1''.54$ . Hence as by levelling on Sept. 21, at  $22\frac{1}{2}^h$ ,  $L_w = +0''.62$ , it follows that the concluded error of collimation  $= +0''.62 - 13''.15 + 1''.54 = -10''.99$ , which is used from Sept. 21.

On Sept. 28 an adjustment was applied to the eye-piece, by which the distance of the wire-frame from the object-glass may be regulated. This was done in order that in the use of the collimating eye-piece the wires and their images may be seen with equal distinctness. It was found that the variations of length of the Telescope tube by the effect of temperature, altered the distance of the wire-frame from the focus of the object-glass for parallel rays, to an extent which considerably separated the images from the wires. By the new adjustment the position of the wires is shifted along the axis of the tube till they and their images are both seen distinctly, and it is then presumed that the wire-frame is coincident with the geometrical focus of the object-glass. At the same time a comb was introduced within the field of view of the microscope, for the purpose of reading off the integral number of revolutions of the micrometer, the exterior scale having been found inconvenient for this purpose.

No measures were taken for collimation error after the above alterations till Nov. 11,  $0^h$ , when I observed as follows. The micrometer-wire was made to coincide with  $D$  and with its image, and six readings were taken in each position, the means of which were respectively  $10''.928$  and  $8''.976$ . Hence  $a = +\frac{1}{2}(10''.928 - 8''.976) = +0''.976 = +16''.65$ . And by levelling on Nov. 11 at  $1^h$ ,  $L_w = +3''.69$ . Hence the concluded error of collimation  $= +3''.69 - 16''.65 + 1''.54 = -11''.42$ . This value, which differs little from that obtained on Sept. 22, is used from Sept. 30.

After the foregoing measures the wire-frame was shifted to diminish the collimation error, and at the same time the distance of the wire-frame from the object-glass was adjusted by the new apparatus. The following measures were then taken. A speck on one of the horizontal wires was bisected three times with the image of the micrometer-wire, and three times with the wire itself, and the mean of the six readings was  $9''.976$ . And the mean of six readings for coincidence with  $D$  being  $10''.336$ , it follows that  $a = +0''.360 = +6''.14$ . Consequently, using the same levelling as before, the concluded error of collimation  $= +3''.69 - 6''.14 + 1''.54 = -0''.91$ , which is used from Nov. 11.

Dec. 30,  $4^h$ , the mean of eight readings for coincidence of the micrometer-wire with its image was  $9''.659$ , and the mean of seven readings for coincidence with  $D$ ,  $10''.294$ . Hence  $a = +0''.635 = +10''.83$ . After these measures the bubble of the spirit-level was too long to admit of taking the level error, on which account the levelling on Dec. 23 is made use of. This gives  $L_w = +4''.50$ , and hence the concluded error of collimation  $= +4''.50 - 10''.83 + 1''.54 = -4''.79$ . I am unable to account for the great change in the value of  $a$  since Nov. 11, the change of level error being only  $0''.81$ . Also the reading for coincidence with  $D$  differs from that of Nov. 11 by not more than  $-0''.042$ . It seems, therefore, that the change of value of  $a$  arose from some displacement of the eye-end of the Telescope, possibly caused by a blow. During the above measures the wind was strong, and the images were obscure and waving.

1854, Jan. 3,  $1^h$ , the Transit was reversed and the collimation and level errors were determined by the collimating eye-piece, the bubble being still too long to admit of using the spirit-level. The temperature was at  $25^\circ$ . Before the reversion, four readings were taken for coincidence of the micrometer-wire with its image, and four for alternate bisections



of a speck by the wire and its image, giving  $9''.684$  for the mean of all. The mean of six readings for coincidence with  $D$  being at the same time  $10''.309$ , the value of  $a$  is  $+0''.625$ , or  $+10''.66$ . After the reversion, the mean of six readings for alternate bisections of a speck with the micrometer-wire and its image was  $10''.560$ , and the mean of six readings for coincidence with  $D$ ,  $10''.304$ . Hence, the Illumination being East,  $b = +0''.256 = +4''.37$ . Consequently the error of collimation of  $D$ , Illumination West,  $= -\frac{1}{2}(10''.66 - 4''.37) = -3''.14$ , and the concluded error of collimation  $= -3''.14 - 1''.18 = -4''.32$ . This value was considered more trustworthy than that of Dec. 30, and is used after Dec. 24, as it appeared from an examination of the observations of Polaris that the change of the value of  $a$  had not occurred on Dec. 23.

### Level Errors in 1853.

\* \* See page viii.

Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.
Jan. 6. <sup>h.</sup> 22	-3.84	West	<sup>o</sup> 44	May 16. <sup>h.</sup> 2	-5.30	West	<sup>o</sup> 60	Aug. 22. <sup>h.</sup> 23	+1.30	West	<sup>o</sup> 63
12. 22	-4.11	—	45	21. 3	-5.76	—	60	29. 2	+1.21	—	59
18. 2	-3.99	—	41	23. 1	-6.40	—	58	Sept. 21. 23 <sup>1</sup> / <sub>2</sub>	+0.62	—	61
26. 0	-3.35	—	39	24. 1	-5.95	—	60	27. 2	+4.17	—	54
31. 2	-3.35	—	41	31. 2	-7.33	—	56	Oct. 3. 1 <sup>3</sup> / <sub>4</sub>	+3.73	—	50
Feb. 7. 2	-3.39	—	38	June 8. 1 <sup>3</sup> / <sub>4</sub>	-6.59	—	65	11. 1 <sup>3</sup> / <sub>4</sub>	+4.60	—	54
23. 22	-3.17	—	36	14. 2	-7.49	—	63	17. 2	+3.86	—	51
Mar. 2. 2	-2.83	—	37	22. 3	-7.10	—	58	24. 1 <sup>3</sup> / <sub>4</sub>	+4.69	—	58
8. 3 <sup>1</sup> / <sub>2</sub>	-4.04	—	47	29. 21	-7.85	—	61	31. 2	+3.67	—	53
21. 3	-2.86	—	37	July 6. 21	-6.98	—	65	Nov. 7. 2	+3.99	—	53
28. 2	-2.77	—	40	15. 21	-8.14	—	57	11. 1	+3.69	—	43
Apr. 4. 2	-4.65	—	52	20. 2	-7.38	—	63	14. 2	+4.76	—	44
10. 22	-5.03	—	48	29. 2	-7.51	—	63	28. 2	+5.03	—	42
19. 2	-5.42	—	53	Aug. 2. 2	-7.90	—	64	Dec. 7. 2	+5.23	—	43
26. 2	-4.60	—	42	8. 2	-8.49	—	65	23. 2	+4.50	—	39
May 2. 2	-5.42	—	55	15. 2	-8.36	—	60				
10. 2	-4.39	—	45	22. 2	-7.46	—					

To reduce these level errors, given immediately by the spirit-level, to those given by the collimating eye-piece, the correction  $+2''.05$  has been applied, this being the mean value of  $l - L_{\text{cor}}$ , as found in page xlv. The resulting values, taken to the nearest tenth of a second, are the adopted level errors.

Between Feb. 7 and 23, and between March 8 and 21, the bubble was too long for reading off, in consequence of low temperature. On March 5 the instrument was thoroughly cleaned, and on the same day an astronomical class came into the Transit room. The mean of the level errors obtained on May 16 and 21, is used for the observations on those and the intermediate days, among which are included the transits for the determination of the Longitude of the Observatory by Galvanic signals. The level error adopted from May 23 is the mean of those obtained on May 23 and 24. Before the second levelling on Aug. 22, the screws of the East pier were turned to diminish the level error. Between Aug. 29 and Sept. 21 the Transit was out of use. I am unable to account for the great difference between the level error of Sept. 21, which was taken by myself, and that of Sept. 27, taken by Mr Breen. A violent storm of wind occurred on Sept. 26 during the observation of the Sun. The bubble was too long towards the close of the year to allow of levelling regularly, on which account the level error adopted from Dec. 27 was deduced in the following manner from the measures for collimation error taken, as already stated, before and after the reversion of the instrument on Jan. 3, 1854. By those measures



$a = +10''.66$ ,  $b = +4''.37$ , and  $l = \frac{1}{2}(a+b) = +7''.51$ . This result, corrected by  $+0''.17$  because the value of  $a$  obtained on Dec. 30 was  $10''.83$ , and by  $-0''.67$  for the effect of heat from the observer, becomes  $+7''.01$ , the adopted level error.

*Calculation of Azimuth Errors in 1853.*

\* \* \* See page x.

Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h'-h$ .	Azimuth Error.	Remarks.
Jan. 31. 10 12	$\delta$ Ursæ Min. SP. $\epsilon$ Hydræ	54.83 32.53	+ 0.17	31.67 59.92	+ 9.62	+ 0.692	+ 13.90	The mean of these is $+15''.0$ , which is used from Jan. 25. The mean of two values obtained Dec. 16—20 was $+10''.0$ . As the azimuth error at this time seems to have continually increased, it was thought best to use the mean between the above results, viz. $+12''.5$ , from the beginning of the year to the end of Jan. 22.
Feb. 2. 8 2. 9	Rigel $\delta$ Ursæ Min. SP.	57.91 50.21	+ 0.08	28.67 32.04	+ 10.99	+ 0.681	+ 16.14	
16. 7 16. 8	Rigel $\delta$ Ursæ Min. SP.	34.88 32.41	+ 0.07	28.48 35.41	+ 9.33	+ 0.681	+ 13.70	
Mar. 1. 7 1. 8	$\alpha$ Orionis $\delta$ Ursæ Min. SP.	1.18 17.95	+ 0.03	12.72 39.34	+ 9.82	+ 0.693	+ 14.17	
11. 2 11. 7	Polaris $\alpha$ Orionis	1.66 44.92	+ 0.37	4.37 12.55	+ 24.55	+ 1.584	+ 15.50	The mean between these, viz. $+15''.8$ , is used from Mar. 8. * A weight of seven-tenths is given to the observation with the micrometer-wire.
14. 13 15. 1	Polaris SP. Polaris	6.09* 56.26	+ 0.91	3.35 3.23	+ 51.20	+ 3.180	+ 16.10	
26. 1 26. 7	Polaris Procyon	33.52 43.00	+ 0.46	60.32 36.37	+ 26.11	+ 1.586	+ 16.46	The mean of these two, viz. $+15''.7$ is used from Mar. 21. * At only one wire.
26. 1 26. 13	Polaris Polaris SP.	33.52 45.34*	+ 0.86	60.32 60.29	+ 47.29	+ 3.180	+ 14.87	
29. 1 29. 13 30. 1	Polaris Polaris SP. Polaris	24.55 39.60 25.50			+ 44.95 - 45.90	+ 3.180 - 3.180	+ 14.28	
Apr. 7. 12 7. 12	Polaris SP. Spica	27.00 14.83	+ 0.02	59.62 28.29	+ 19.18	+ 1.583	+ 12.12	
17. 23 20. 11	Polaris Polaris SP.	45.68 6.15	+ 3.98	1.25 1.57	+ 43.19	+ 3.180	+ 13.58	
26. 11 26. 11	Polaris SP. Spica	59.20 43.41	+ 0.02	3.72 28.39	+ 19.56	+ 1.583	+ 12.36	
May 4. 10 4. 22 5. 10	Polaris SP. Polaris Polaris SP.	52.09 24.33 51.00			- 32.24 + 33.33	- 3.180 + 3.180	+ 10.31	
10. 22 11. 10	Polaris Polaris SP.	20.38 41.88	+ 0.92	9.97 10.25	+ 39.14	+ 3.180	+ 12.31	
16. 9 16. 21	Polaris SP. Polaris	38.27 9.39	+ 0.82	12.69 12.93	- 31.70	- 3.180	+ 9.97	
20. 9 20. 9	Polaris SP. Spica	34.50 2.19	+ 0.01	15.01 28.37	+ 14.34	+ 1.583	+ 9.06	The mean between these, viz. $+9''.9$ , is used from May 19.
21. 9 21. 9	Polaris SP. Spica	31.15 0.61	+ 0.01	15.74 28.37	+ 16.84	+ 1.583	+ 10.64	
June 8. 8 8. 8	Polaris SP. Spica	21.69 33.47	+ 0.01	28.74 28.28	+ 12.25	+ 1.583	+ 7.74	

Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h'-h$ .	Azimuth Error.	Remarks.
June 15. 8 15. 8	Polaris SP. Spica	16,69 23,22	+ 0,01	33,74 28,23	+ 12,05	+ 1,583	+ 7,61	
23. 7 23. 7	Polaris SP. Spica	10,97 12,52	+ 0,01	40,62 28,16	+ 14,02	+ 1,583	+ 8,86	
July 1. 11 1. 12	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	33,48 45,29	+ 0,02	0,54 4,82	+ 7,55	+ 0,703	+ 10,74	
15. 5 15. 12	Polaris SP. $\gamma$ Aquilæ	0,76 32,01	+ 0,37	58,65 18,24	+ 12,03	+ 1,598	+ 7,53	
26. 9 26. 10	$\alpha$ Herculis $\delta$ Ursæ Minoris	56,16 4,00	+ 0,07	58,48 0,28	+ 6,11	+ 0,677	+ 9,03	
Aug. 2. 9 2. 10	$\alpha$ Herculis $\delta$ Ursæ Minoris	45,99 51,85	+ 0,07	58,42 58,34	+ 6,01	+ 0,677	+ 8,88	The transit of $\delta$ Ursæ Minoris was at only one wire.
8. 8 8. 9 8. 9	$\alpha$ Ophiuchi $\mu$ Sagittarii $\delta^1$ Ursæ Minoris	46,93 38,81 39,69	- 0,05 - 0,02	8,42 0,57 56,58	+ 4,78	+ 0,691	+ 6,92	The azimuthal correction and value of $h'-h$ are mean results of comparisons of $\delta$ Ursæ Minoris with the other two stars.
23. 8 23. 8	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	16,52 17,19	+ 0,02	0,41 51,53	+ 9,57	+ 0,703	+ 13,61	This value is used from Aug. 23, after the alterations of the level and collimation errors mentioned in p. xlvii.
29. 3 29. 3	Polaris SP. Spica	22,16 35,05	+ 0,01	30,61 27,47	+ 16,04	+ 1,583	+ 10,13	
Sept. 23. 13 26. 1	Polaris Polaris SP.	18,86 46,52	+ 4,17	40,86 41,56	+ 28,87	+ 3,180	+ 9,08	Between Aug. 29 and Sept. 21 the transit observations were discontinued.
Oct. 3. 0 3. 12	Polaris SP. Polaris	34,91 6,65	+ 0,88	42,42 42,52	- 32,52	- 3,180	+ 10,23	
10. 23 13. 0	Polaris SP. Arcturus	24,95 48,14	+ 2,90	43,51 57,36	+ 12,24	+ 1,605	+ 7,63	Not used, the next determination being thought preferable.
17. 23 20. 11	Polaris SP. Polaris	11,56 40,51	+ 4,36	43,28 43,36	- 33,23	- 3,180	+ 10,45	The mean of these, viz. + 10",2, is used from Oct. 10.
20. 11 21. 23	Polaris Polaris SP.	40,51 6,05	+ 2,76	43,36 43,32	+ 31,66	+ 3,180	+ 9,96	
25. 11 25. 23	Polaris Polaris SP.	25,47 55,66	+ 0,91	42,79 42,66	+ 28,77	+ 3,180	+ 9,05	
25. 23 28. 10 30. 23	Polaris SP. Polaris Polaris SP.	55,66 18,15 47,62			- 22,49 + 30,53	- 3,180 + 3,180	+ 8,34	The mean of the two determinations, viz. + 8",1, is used from Oct. 23.
30. 23 31. 23 Nov. 1. 10 1. 22	Polaris SP. Polaris SP. Polaris Polaris SP.	47,62 46,18 10,49 45,20	- 1,97*		- 24,57 + 25,29	- 3,180 + 3,180	+ 7,84	* This correction reduces the observation of Oct. 30 to the time of that of Oct. 31, and the mean of the two is then used.
10. 9 10. 10	$\beta$ Ceti Polaris	14,83 58,80	+ 0,04	15,21 38,44	+ 20,78	+ 1,604	+ 12,95	I am unable to account for the great change of azimuth error.
16. 9 16. 10	Polaris $\alpha$ Arietis	50,87* 46,30	+ 0,06	36,39 56,78	+ 24,90	+ 1,573	+ 15,83	* The mean from the observations with and without the micrometer-wire.
Dec. 1. 8 1. 12	Polaris Aldebaran	14,76* 55,41	+ 0,23	28,70 32,74	+ 23,16	+ 1,578	+ 14,68	* Weights in the proportion of 4 to 1 are given to the observations with and without the microm.-wire.
9. 0 9. 1	$\alpha$ Ophiuchi $\delta$ Ursæ Minoris	16,33 32,24	+ 0,06	7,08 11,45	+ 11,60	+ 0,679	+ 17,08	The mean between these, viz. + 16",0, is used from Dec. 5.
9. 7 9. 8	$\alpha$ Andromedæ Polaris	58,86 55,50	+ 0,08	49,88 23,08	+ 23,52	+ 1,568	+ 15,00	



Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $k'-h$ .	Azimuth Error.	Remarks.
Dec. 12. 8	Polaris	49,60*	.	21,19	.	.	"	* Weights in the proportion of 3 to 1 are given to the observations with and without the microm.-wire. + The mean result from the two stars.
12. 9	$\alpha$ Arietis	60,35	+ 0,06	56,71	+ 24,79†	+ 1,585	+ 15,64	
12. 10	$\alpha$ Ceti	42,41	+ 0,13	39,00				
23. 6	$\beta$ Ceti	3,04		14,80	+ 23,52	+ 1,604	+ 14,65	* Weights in the proportion of 9 to 5 are given to the observations with and without the microm.-wire.
23. 7	Polaris	24,42*	+ 0,05	12,71				
30. 6	Polaris	4,82		7,50	+ 19,27	+ 1,587	+ 12,14	
30. 8	$\alpha$ Ceti	16,88	+ 0,10	38,93				

The assumed apparent R.A. employed in the above calculations are the R.A. of the Nautical Almanac, corrected by the excesses in the subjoined Table, and in the instances of Polaris and  $\delta$  Ursæ Minoris, by the small quantities in pages 478 and 479 of the Nautical Almanac for 1853.

Star.	Assumed Mean R.A. Jan. 1, 1853.	Excess above the R.A. of Naut. Alm.	Star.	Assumed Mean R.A. Jan. 1, 1853.	Excess above the R.A. of Naut. Alm.
$\alpha$ Andromedæ..	<i>h. m. s.</i> 0. 0. 47,80	+ 0,02	Arcturus.....	<i>h. m. s.</i> 14. 8. 57,44	+ 0,04
$\beta$ Ceti.....	0. 36. 12,57	+ 0,17	$\epsilon$ Bootis.....	14. 38. 33,97	- 0,02
Polaris.....	1. 5. 54,51	+ 0,56	$\alpha^1$ Libræ.....	14. 42. 45,34	+ 0,16
$\alpha$ Arietis.....	1. 58. 53,78	+ 0,12	$\alpha$ Coronæ Bor..	15. 28. 27,85	+ 0,03
$\alpha$ Ceti.....	2. 54. 36,01	+ 0,05	$\alpha$ Serpentis....	15. 37. 1,80	+ 0,07
Aldebaran.....	4. 27. 29,38	+ 0,01	$\delta$ Ophiuchi....	16. 6. 38,80	+ 0,12
Rigel.....	5. 7. 28,57	+ 0,12	Antares.....	16. 20. 24,12	+ 0,10
$\beta$ Tauri.....	5. 17. 0,14	+ 0,01	$\alpha$ Herculis.....	17. 7. 56,80	+ 0,12
$\alpha$ Orionis.....	5. 47. 12,88	+ 0,03	$\alpha$ Ophiuchi....	17. 28. 6,77	+ 0,13
Sirius.....	6. 38. 40,29	+ 0,02	$\mu^1$ Sagittarii....	18. 4. 58,48	+ 0,20
Castor.....	7. 25. 12,83	+ 0,02	$\delta$ Ursæ Minoris.	18. 19. 45,31	- 0,43
Procyon.....	7. 31. 36,39	+ 0,22	$\beta$ Lyræ.....	18. 44. 39,17	+ 0,07
Pollux.....	7. 36. 18,82	- 0,02	$\zeta$ Aquilæ.....	18. 58. 39,26	+ 0,12
$\epsilon$ Hydræ.....	8. 38. 59,34	+ 0,01	$\gamma$ Aquilæ.....	19. 39. 16,26	+ 0,06
$\alpha$ Hydræ.....	9. 20. 21,89	+ 0,16	$\alpha$ Aquilæ.....	19. 43. 36,66	+ 0,09
Regulus.....	10. 0. 32,33	+ 0,02	$\beta$ Aquilæ.....	19. 48. 5,60	+ 0,13
$\delta$ Leonis.....	11. 6. 17,09	+ 0,04	$\alpha^2$ Capricorni...	20. 9. 53,81	+ 0,21
$\beta$ Leonis.....	11. 41. 33,53	+ 0,08	$\beta$ Aquarii.....	21. 23. 49,12	+ 0,13
$\beta$ Corvi.....	12. 26. 40,56	+ 0,30	$\alpha$ Aquarii.....	21. 58. 14,02	+ 0,18
Spica.....	13. 17. 27,32	+ 0,14	$\alpha$ Pegasi.....	22. 57. 26,49	+ 0,07

The assumed Mean R.A. were deduced from the results of the observations of the fundamental stars in 1852 in the manner explained in page xiv. The mean excess above the R.A. of the Nautical Almanac, excluding Polaris and  $\delta$  Ursæ Minoris, is + 0<sup>s</sup>.093.

In the calculation of the corrections for  $\alpha$  Andromedæ the seconds of the mean R.A. of the Nautical Almanac were inadvertently taken to be 47<sup>s</sup>.80 instead of 47<sup>s</sup>.78. The corrections are therefore all too great by 0<sup>s</sup>.02, and the concluded R.A. of the star from the observations of 1853 is also too great by the same quantity.

The clock's rate appears to have been affected by depression of temperature on Feb. 16—18, and Dec. 14—16, and by a rise of temperature between March 1 and March 8.

The correction for difference of personal equation of B and C applied on Jan. 5, viz. - 0<sup>s</sup>.03, was obtained by reducing the transits of clock-stars taken by the two observers on Jan. 8 to the same epoch, the clock's rate being inferred exclusively from observations by B. The same rate was used in reducing C's observations on Jan. 8, which in other respects were reduced independently of B's clock-errors. In the calculation of the rates on Dec. 27 and 28, no account is taken of the difference of the personal equations of C and T, which is very small. The transits taken from May 16 to May 20, by B, T, and D (Mr Dunkin of Greenwich), which include those employed in the determination of the Longitude



by Galvanic signals, are reduced independently. The adopted rates are means of rates inferred from the observations of different observers taken separately, which were very accordant. Comparisons of the clock-errors of the three observers, reduced to the same epochs for the purpose of inferring differences of personal equation, gave the following results.

1853.	Number of B's transits.	Number of T's transits.	Number of D's transits.	(B-T).	Differences of the clock's loss, (B-D).	(T-D).
May 17	4	6		+ 0,09		
18	9		3		+ 0,06	
19	3	3	3	+ 0,08	+ 0,09	+ 0,01

Hence B's times are *earlier* than T's by 0<sup>s</sup>,085 and earlier than D's by 0<sup>s</sup>,075, and consequently T's are *later* than D's by 0<sup>s</sup>,01. But as by direct comparison on May 19 T's times are *earlier* than D's by 0<sup>s</sup>,01, it may be inferred that D and T observe alike.

In general transits at fewer than three wires have been rejected; but the following are retained. The transits of each of the Sun's limbs at two wires on Jan. 17, which serve to measure the diameter, but give a discordant error of the Tables; the transit of 2 L at two wires on April 7; and the transits of one of the limbs at two wires on July 26, July 29, and Aug. 8, which are not used for measuring the diameter, but in each case are combined with the transits of the other limb for deducing the R.A. of centre, by applying the Tabular reduction to centre, and giving to the two results weights proportional to the respective number of wires. On April 12 the transit of  $\beta$  Corvi at two wires is used for clock-error, the weight assigned to it being two-sevenths of that given to the transits of the other clock-stars in the same group. On March 26 Polaris SP. at one wire is used with Polaris for the calculation of azimuth error, but the result is combined with one given by Polaris and Procyon on the same day. The transit of  $\delta$  Ursæ Minoris on Aug. 2 is retained for azimuth error, giving a value nearly the mean between the preceding and following azimuth errors.

It having been found that the results of transits at the bars did not agree with the results of transits at wires for the same meridian passages, a comparison was made between all the simultaneous wire- and bar-transits taken by the different observers in 1853 and 1854. From the discussion it appeared that in Mr Breen's observations the bar-transits were *later* than the wire-transits by 0<sup>s</sup>,20 when the objects could be seen distinctly at the wires, and by 0<sup>s</sup>,33 when the objects were very faint. The difference between these two quantities, it was thought, might be distributed between the wires and the bars, it being remarked that the noted time of transit of a faint object is usually too early at a wire, and too late at a bar, to a greater amount as the object is fainter. For these reasons B's bar-transits of bright objects down to magnitudes 8 and 9, are corrected by - 0<sup>s</sup>,20, and those of fainter objects are corrected by the same quantity when accompanied by wire-transits, but when taken only at the bars by the mean of the above quantities, that is, by - 0<sup>s</sup>,26.

From a discussion of all the instances in 1853 in which Mr Todd observed an object at wires and bars at the same meridian passage, it appeared that both for bright objects to Mag. 9, and for very faint Planets, the bar-transit was *later* than the wire-transit by the mean quantity 0<sup>s</sup>,12. Hence the correction - 0<sup>s</sup>,12 is applied to all T's bar-transits. The simultaneous transits at wires and bars in 1854 gave different results, which will be taken account of when the transits of that year are under consideration. No correction is applied to C's observation at bars on Dec. 28, there being no data for calculating it.

After the bar-transits have been corrected in the manner above stated, they are taken to be of equal weight with the wire-transits, and the results from the two kinds of observation at the same meridian passage, are finally combined with weights proportional to the number of wires and the number of bars.

II. *Mean Right Ascensions of the Fundamental Stars, and of the other Stars, as deduced from the separate observations, and the concluded Mean Right Ascensions of all the Stars observed in 1853, with the Annual Variations.* Pages 164—180.

The Corrections and Annual Variations were calculated by the formulæ in p. xvii.

III. *Apparent North Polar Distances observed with the Mural Circle.* Pages 182—208.

The printed observations require few notices in addition to those given in the notes at the bottom of the pages. The following Table contains the results of the microscope readings taken in 1853 to ascertain the corrections for Runs.



*Corrections for Runs in 1853.*

Time of Observation, 1853.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.	Time of Observation, 1853.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.
	A	B	C	D	E	F				A	B	C	D	E	F		
Jan. 6. 8	+2,8	+5,1	-1,7	+2,2	+1,5	+3,9	+13,8	0	July 18. 2	+0,3	+3,4	-2,8	+2,6	+1,1	+2,4	+7,0	0
6. 8	+0,5	+4,0	-2,1	+1,4	+2,0	+4,2	+10,0		18. 2	-0,1	+4,1	-2,5	+1,0	+1,1	+3,0	+6,6	60
19. 0	0,0	+3,9	-2,9	+2,1	+2,1	+2,5	+7,7	42	25. 2	+0,2	+3,2	-3,4	+1,3	+0,8	+2,4	+4,5	66
19. 3	+2,0	+3,7	-2,7	+2,0	+2,0	+3,4	+10,4	42	Aug. 2. 1	0,0	+3,1	-2,8	+0,8	+1,4	+2,3	+4,8	65
24. 8	+1,4	+4,5	-1,6	+2,5	+1,8	+2,4	+11,0	39	9. 12	+0,4	+4,4	-2,7	+1,3	+1,2	+3,0	+7,6	57
Feb. 7. 7	+1,4	+3,7	-2,6	+1,1	+2,1	+2,6	+8,3	38	10. 13	+0,1	+3,7	-3,0	+0,5	+1,6	+3,0	+5,9	58
7. 7	+1,0	+4,2	-1,7	+2,0	+1,5	+3,3	+10,3		15. 2	+1,1	+4,0	-2,7	+2,5	+2,1	+3,1	+10,1	60
21. 1	+1,4	+4,0	-2,2	+2,1	+1,2	+3,5	+10,0	33	15. 2	+0,3	+2,9	-2,7	+0,5	+1,3	+2,5	+4,6	
21. 1	+0,7	+2,8	-1,9	+3,2	+1,4	+4,2	+10,4		21. 22	+0,5	+3,4	-3,7	+1,8	+1,2	+2,2	+5,4	63
Mar. 8. 8	+1,0	+3,9	-2,2	+2,9	+1,9	+2,6	+10,1	43	21. 22	+0,2	+4,0	-2,5	+0,7	+0,4	+2,7	+5,5	
14. 2	+0,2	+3,4	-1,7	+2,8	+1,4	+2,4	+8,5	45	23. 1	+0,2	+3,7	-2,7	+1,2	+0,6	+2,6	+5,6	63
14. 2	+1,4	+5,3	-3,0	+2,2	+1,6	+2,9	+10,4		Sept. 23. 1	+0,8	+3,7	-3,7	+2,1	+0,9	+4,1	+7,9	59
22. 2	+0,8	+3,7	-2,3	+2,7	+2,8	+2,9	+10,6	37	23. 1	+0,3	+4,3	-3,2	+2,4	+0,1	+4,4	+8,3	
22. 2	+0,9	+3,8	-2,1	+1,9	+2,5	+3,1	+10,1		24. 10	+0,9	+4,0	-2,1	+1,8	+0,9	+3,3	+8,8	44
29. 7	+0,7	+4,7	-1,9	+2,9	+1,1	+3,8	+11,3	37	Oct. 3. 1	+0,9	+4,1	-2,8	+1,6	+1,3	+3,6	+8,7	50
29. 7	+1,5	+4,5	-1,6	+1,2	+1,5	+3,6	+10,7		13. 0	+0,3	+3,9	-3,9	+0,1	+0,3	+3,1	+3,8	55
Apr. 5. 6	+0,6	+4,6	-2,5	+1,6	+1,0	+2,3	+7,6	54	13. 0	+0,8	+3,9	-2,9	+1,0	+1,6	+3,3	+7,7	
14. 8	+0,7	+5,2	-2,1	+2,0	+2,3	+3,4	+11,5	43	17. 2	+1,0	+3,5	-3,6	+1,1	+2,0	+3,2	+7,2	51
21. 7	+1,0	+4,3	-2,4	+3,3	+1,5	+4,0	+11,7	42	17. 2	+1,1	+4,3	-3,0	+2,0	+1,4	+3,7	+9,5	
21. 7	+1,5	+3,2	-2,7	+1,6	+1,7	+3,4	+8,7		24. 2	-0,4	+3,7	-3,5	+1,7	+0,7	+2,7	+4,9	58
28. 6	+0,9	+4,2	-3,0	+3,0	+0,8	+3,8	+9,7	47	24. 2	+1,2	+3,4	-2,5	+1,5	+0,2	+3,0	+6,8	
May 5. 8	+1,1	+4,6	-2,1	+1,4	+1,5	+3,1	+9,6	43	27. 0	+0,2	+4,5	-2,0	+1,6	+1,5	+2,0	+7,8	
5. 8	+1,0	+4,3	-2,5	+0,7	+1,4	+2,8	+7,7		31. 1	+0,5	+4,1	-3,6	+2,1	+1,1	+2,7	+6,9	54
10. 22	+1,0	+4,3	-1,9	+1,4	+1,2	+2,7	+8,7	45	31. 1	+0,9	+4,0	-2,4	+2,4	+2,6	+2,7	+10,2	
16. 22	+0,9	+3,6	-2,3	+2,1	+0,2	+2,0	+6,5	57	Nov. 14. 1	+0,5	+3,6	-2,4	+2,9	+1,1	+3,1	+8,8	44
June 1. 1	+0,7	+3,4	-2,9	+2,1	+0,6	+1,9	+5,8	53	14. 8	+1,3	+3,5	-2,3	+1,0	+0,8	+3,0	+7,3	39
1. 1	+0,3	+3,8	-2,9	+0,9	+3,0	+2,3	+7,4	49	21. 12 <sub>1</sub>	+1,5	+4,6	-2,3	+2,4	+2,4	+3,4	+12,0	34
11. 1	-0,5	+4,0	-2,8	+2,1	+0,8	+2,0	+5,6	64	21. 12 <sub>2</sub>	+0,9	+4,7	-2,2	+2,6	+2,1	+2,9	+11,0	
11. 1	-1,0	+3,7	-2,7	+1,6	+0,4	+2,7	+4,7		Dec. 5. 7	+0,4	+4,9	-2,4	+1,8	+1,7	+4,3	+10,7	42
18. 1	+0,7	+3,9	-2,7	+1,8	+1,0	+2,3	+7,0	64	5. 7	+1,6	+4,4	-1,7	+1,8	+2,2	+4,2	+12,5	
24. 7	-0,3	+4,5	-2,9	+1,0	+0,8	+3,4	+6,5	64	12. 21	+1,2	+4,2	-1,7	+2,3	+2,1	+3,2	+11,3	
July 6. 3	+0,5	+3,1	-3,6	+1,4	+0,7	+2,5	+4,6	70	12. 21	+1,5	+4,9	-1,9	+1,1	+2,3	+5,2	+13,1	
11. 1	0,0	+3,7	-3,0	+2,0	+0,2	+3,0	+5,9		20. 8	+1,6	+4,4	-1,8	+1,9	+1,8	+4,4	+12,3	35
11. 1	+0,8	+3,2	-3,1	+1,7	+1,0	+3,4	+7,0	64	20. 8	+1,2	+4,5	-1,7	+1,6	+2,4	+4,6	+12,6	

The observations for Runs were generally taken at the same time as the observations for Zenith Point, and by the same observer. The mean of results obtained nearly contemporaneously in different positions of the Telescope is adopted in the calculation both of the zenith point and of concluded circle readings. The mean of the corrections of Aug. 9 and 10 is used from Aug. 6. The Runs of Oct. 27 are used only in calculating the value of the micrometer revolution from measures taken on that day. The correction adopted from Dec. 27 was obtained on Jan. 3, 1854.

From Sept. 22 the reference micrometer reading is 9',000, that for the previous part of the year being 10',000. The change was made after the insertion of a fixed wire between Aug. 27 and Sept. 22, for the purpose of avoiding interferences by the fixed wire with bisections by the micrometer-wire in reflection observations, the reading for the position of the former being nearly 10',000.

Oct. 27, 0<sup>h</sup>—1<sup>h</sup>, Mr Todd took the following measures for determining the value of the micrometer revolution by means of the mark on the tower of Grantchester church. The circumstances were considered favourable: temperature, 58°.

Micro- meter reading.	Pointer reading.	Microscope A	B	C	D	E	F	Correction for Runs.	Concluded Circle reading.	Difference.	Mean of consecutive differences.
- 15	239.10	1.17,8	21,7	19,4	17,3	18,9	21,7	+ 2,0	239.11.19,80	10.25,15	
+ 15	239.20	1.42,6	47,2	44,3	43,9	44,2	44,8	+ 2,7	239.21.44,95	10.26,38	10.25,77
- 15	239.10	1.16,2	21,0	18,5	16,6	17,6	19,5	+ 2,0	239.11.18,57	10.25,88	10.26,13
+ 15	239.20	1.42,5	46,9	44,0	42,2	44,0	44,4	+ 2,7	239.21.44,45	10.25,95	10.25,95
- 15	239.10	1.16,0	20,7	18,5	16,6	17,8	19,0	+ 2,0	239.11.18,43	10.26,02	10.25,66
+ 15	239.20	1.42,1	45,8	43,2	41,8	43,3	43,5	+ 2,7	239.21.43,73	10.25,30	10.25,36
- 15	239.10	1.16,0	21,0	17,6	16,6	17,2	19,5	+ 2,0	239.11.18,32	10.25,41	

The corrections for Runs were calculated from the correction  $+7'',8$  for  $5'$  given in the foregoing Table of Runs. The mean of the differences of the circle readings for  $30'$  in the last column is  $625'',77$ , and consequently  $1'' = 20'',859$ , which is adopted.

At the same time that the apparatus for adjusting the distance of the wires from the object-glass was introduced, a broad dark bar was attached to the frame carrying the micrometer-wire, having its edge parallel to the wire and distant from it by very nearly  $10''$  in the direction *from* the micrometer-head. This bar was used for bisecting faint objects in a field too dark for seeing the micrometer-wire. The letter B is put in the second column after the name of an object bisected in this manner. To reduce a bisection with the bar to a bisection with the wire, the difference of the micrometer readings for the coincidences of the micrometer-wire and the bar with the fixed wire, is obtained near the time of the observation, at the interval from the middle of the field at which the bisection was made. The micrometer is read off for a bisection with the bar just as if the wire had been used, and the recorded reading is that which is inserted in column 10. The correction applied to this reading, is the algebraic excess of  $10''$  above the interval between the bar and the wire as measured by the above-mentioned coincidence readings. This correction is 'the reduction to wire-reading' inserted in the notes. The following is a list of the coincidence readings from which the adopted corrections were inferred.

*Coincidences of the micrometer-wire and bar with the fixed wire in 1853.*

Date.	Reading for coincidence of wire.	Reading for coincidence of bar.	Reduction to wire-reading.	Interval from middle wire.	Date.	Reading for coincidence of wire.	Reading for coincidence of bar.	Reduction to wire-reading.	Interval from middle wire.
Sept. 24. 11	10,045	19,986	+ 0,059	+ 2 $\frac{3}{4}$	Nov. 18. 13	10,052	19,998	+ 0,054	+ 2
Oct. 20. 13	10,034	19,982	+ 0,052	+ 2	19. 12 $\frac{1}{2}$	10,036	19,973	+ 0,063	+ 1
25. 9	10,027	19,959	+ 0,068	+ 2	21. 12 $\frac{1}{2}$	10,051	19,995	+ 0,056	+ 2
Nov. 1. 8	10,021	19,973	+ 0,048	0	Dec. 2. 12		19,988	+ 0,036	0
2. 14	10,024	19,983	+ 0,041	0	5. 7	10,024			
3. 14	10,026	19,989	+ 0,037	0	12. 9		20,011	+ 0,020	0
8. 13	10,041	19,983	+ 0,058	+ 2	12. 21	10,031			
10. 9	10,039	19,979	+ 0,060	0	27. 9 $\frac{1}{2}$	10,026	20,002	+ 0,024	0
14. 12	10,047	19,993	+ 0,054	+ 2	28. 9 $\frac{1}{2}$	10,037	19,992	+ 0,045	0
16. 13	10,053	19,991	+ 0,062	+ 2	30. 9	10,038	19,993	+ 0,045	0
17. 9	10,050	19,996	+ 0,054	+ 2	31. 9	10,038	19,990	+ 0,048	0

Each of the above micrometer readings is generally the mean of four readings. In several instances, the objects for which the coincidences were intended, were found not to be Planets, and the observations were consequently not retained, but the coincidence readings are included in the above list.



*Zenith Points obtained in 1853 with the Collimating Eye-piece.*

Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.
Jan. 6. 8 <sup>A</sup>	11,50	Apr. 14. 8 <sup>A</sup>	35,63	July 11. 1 <sup>A</sup>	35,54	Sept. 23. 1 <sup>A</sup>	50,38
12.	37,78	14. 8	35,04	18. 2	35,49	23. 1	50,54
19. 0	37,62	21. 7	35,33	18. 2	34,88	24. 10	50,43
19. 3	35,87	28. 6	35,38	25. 2	36,20	Oct. 3. 1	50,74
24. 8	35,47	May 5. 8	35,25	25. 2	36,30	13. 0	49,39
Feb. 7.	35,30	11. 3	35,17	Aug. 2. 1	36,75	17. 2	49,50
21.	35,17	16. 22	36,24	2. 1	35,44	24. 2	50,12
Mar. 8.	35,32	June 1. .	36,31	9. 12	35,26	31. 1	50,09
14. 2	34,09	1.	36,94	9. 12	35,90	Nov. 14. . 1	49,96
22. 2	34,41	11.	36,38	15. 2	36,36	21. 2	49,57
29. 7	34,45	11. .	36,90	15. 2	36,18	Dec. 5. 7	48,73
29. 7	34,89	18. 1	36,47	21. 22	35,77	12. 21	48,71
Apr. 5. 6	34,48	24. 7	36,30	21. 22	35,79	20. 8	48,91
5. 6	34,45	July 6. 3	35,48	23. 1	6,54		

The degrees and minutes of the Zenith Point to Jan. 12, on which day the Telescope was shifted on the Circle, were  $112^{\circ}.1'$ ; after that to the end of August,  $179^{\circ}.22'$ ; and from Sept. 23 to the end of the year,  $179^{\circ}.21'$ .

The Runs taken on Jan. 19 were used in the calculation of the zenith point of Jan. 12, no observation of Runs having been made on the latter day. Previous to taking the zenith point the second time on Jan. 19, the wire-frame was shifted slightly along the axis of the Telescope, in order that the micrometer-wire and its reflected image might be seen with equal distinctness. This adjustment seems to have produced some change of zenith point. On March 29, and on subsequent occasions, the measures were repeated with the Telescope in a slightly different position. This was done to try the effect of changing the place of the reflected image in the field. From the result of these and other trials it appeared, that the zenith point was somewhat affected by varying the position of the image, and that the image should always be in the same part of the field, not far from the middle. In every case the mean between two values obtained nearly contemporaneously has been adopted. The change of zenith point between April 5 and April 14, may be partly owing to the circumstance mentioned in the note (p. 190); but it is also to be considered that the seconds of zenith point usually advance with the increase of the Temperature of the year. The changes of zenith point on Aug. 23 and Sept. 23 are due to fresh adjustments of the microscopes on removing the Circle from the wall.

The reading for coincidence of the micrometer-wire with its image was obtained in various ways on different occasions. Frequently they were placed in actual coincidence. On July 25, the image was placed alternately on one side and the other of the wire at distances judged to be equal. After the insertion of the fixed wire, use was made of it for obtaining the micrometer reading for the zenith direction. On Sept. 23, the micrometer-wire and its image were alternately brought into coincidence with the fixed wire. On Oct. 3, 24, 31, Nov. 14 and 21, the same method was used in conjunction with the method of equidistant intervals described in page xlv. On Oct. 13 and 17 the latter method was used exclusively.

On June 24 the new mercury trough described in page xlv. was made use of. Six readings were taken for coincidence of the micrometer-wire with its image, and then after reversing the trough six additional readings were taken; and the mean results were  $12^{\circ}.017$  and  $12^{\circ}.022$ . As it was remarked that during these measures the surface of the mercury was covered by a thin film; after clearing it the measures were repeated, and the resulting mean readings were  $12^{\circ}.031$  and  $12^{\circ}.036$ , the mean between which is the value employed in calculating the zenith point. The new trough was similarly used on July 18, Aug. 9, 15 and 21; after which, for the reasons stated in page xlv., the use of it was discontinued.

The Corrections for deducing the Mean from the Apparent N.P.D., and the Annual Variations, in pages 210—224, were calculated by the formulæ given in p. xxv.

*Mean Excess for each Star of the adopted Zenith Points above the Zenith Points given by direct and reflection observations in 1853.*

\*.\* See page xxv.

Star.	Zen. Dist. South.	No. of Obs.	Mean value of M-Z.	Star.	Zen. Dist. South.	No. of Obs.	Mean value of M-Z.
Polaris SP.....	- 39. 15	13	- 0.38	Pollux.....	+ 23. 50	5	+ 0.38
Polaris.....	36. 19	20	- 0.25	$\alpha$ Andromedæ.....	23. 56	5	+ 0.36
$\delta$ Ursæ Minoris....	34. 23	5	- 0.59	$\epsilon$ Bootis.....	24. 31	1	+ 1.48
$\kappa$ Cephei.....	25. 3	1	+ 0.03	$\beta$ Vulpeculæ.....	24. 43	1	+ 1.41
B.A.C. 6048.....	20. 1	1	- 0.04	$\alpha$ Coronæ.....	25. 0	1	+ 1.12
$\psi$ Draconis.....	20. 0	2	- 1.56	$\psi$ Pegasi.....	27. 53	1	+ 1.14
$\beta$ Cephei.....	17. 42	3	- 1.70	$\eta$ Tauri.....	28. 34	1	+ 0.21
$\rho$ Draconis.....	15. 14	1	+ 0.24	$\tau$ Pegasi.....	29. 17	3	+ 1.34
$\sigma$ Cephei.....	15. 5	1	- 0.01	Arcturus.....	32. 16	1	+ 1.00
$\theta$ Cephei.....	10. 17	1	+ 0.08	$\nu$ Bootis.....	35. 41	1	+ 0.48
$\kappa$ Cassiopeiae.....	9. 54	2	- 0.66	$\theta$ Leonis.....	35. 59	1	- 0.04
$\alpha$ Cephei.....	9. 45	1	+ 0.49	Aldebaran.....	36. 0	2	- 0.81
$\sigma$ Ursæ Majoris....	8. 59	1	- 0.56	$\beta$ Leonis.....	36. 49	2	- 0.78
B.A.C. 7651.....	8. 38	1	- 0.70	$\alpha$ Delphini.....	36. 49	3	+ 0.62
$\nu$ Cephei.....	8. 14	1	- 0.29	$\nu$ Orionis.....	37. 26	2	+ 0.23
$\iota$ Draconis.....	7. 16	1	+ 0.12	$\alpha$ Herculis.....	37. 39	1	+ 0.05
$\delta$ Ursæ Majoris....	5. 38	1	+ 0.56	$\alpha$ Pegasi.....	37. 48	8	- 0.45
$\beta$ Ursæ Majoris....	4. 57	2	- 1.19	$\gamma$ Pegasi.....	37. 51	1	+ 0.76
$\alpha$ Cassiopeiae.....	3. 31	1	- 0.53	Regulus.....	39. 32	3	- 0.30
$\eta$ Persei.....	2. 57	1	- 1.43	$\alpha$ Ophiuchi.....	39. 33	3	- 0.18
$\mu$ Cassiopeiae.....	- 1. 59	1	- 0.95	$\gamma$ Aquilæ.....	41. 58	1	+ 2.16
$\pi^1$ Cygni.....	+ 1. 42	2	+ 1.54	$\zeta$ Pegasi.....	42. 9	1	- 0.02
$\beta$ Cygni.....	4. 57	1	+ 0.07	$\eta$ Ophiuchi.....	42. 40	1	- 0.32
$\tau$ Herculis.....	5. 33	1	(- 2.18)	$\delta$ Equulei.....	42. 48	1	- 0.52
$\iota$ Herculis.....	6. 8	1	+ 0.30	$\xi$ Tauri.....	43. 0	1	- 0.22
Capella.....	6. 22	1	+ 0.85	$\chi$ Leonis.....	44. 5	1	+ 0.40
$\lambda$ Andromedæ.....	6. 33	1	+ 0.13	$\alpha$ Orionis.....	44. 50	1	+ 0.98
$\psi$ Andromedæ.....	6. 37	1	+ 1.37	$\tau$ Aquilæ.....	45. 21	1	+ 1.03
$\delta$ Cygni.....	7. 27	1	+ 1.22	$\beta$ Aquilæ.....	46. 10	1	+ 1.84
$\alpha$ Cygni.....	7. 28	4	+ 0.90	$\nu$ Ceti.....	47. 16	1	+ 0.29
$\beta$ Cygni.....	8. 23	1	- 0.69	$\iota$ Piscium.....	47. 23	2	- 0.38
$\eta$ Aurigæ.....	11. 11	1	+ 1.26	$\alpha$ Ceti.....	48. 42	1	- 0.11
$\beta$ Bootis.....	11. 15	1	+ 0.32	$\delta$ Aquilæ.....	49. 23	1	- 0.57
$\nu$ Cygni.....	11. 37	1	+ 1.28	$\zeta$ Virginis.....	52. 4	1	+ 0.92
$\epsilon^1$ Lyræ.....	12. 42	1	- 1.38	$\alpha$ Aquarii.....	53. 15	1	+ 0.95
$\alpha$ Lyræ.....	13. 34	4	- 0.24	$\delta$ Ophiuchi.....	55. 32	1	- 0.50
$\rho$ Herculis.....	14. 56	1	- 1.38	$\beta$ Aquarii.....	53. 26	2	+ 1.02
$\rho$ Andromedæ.....	15. 4	2	- 0.24	$\epsilon$ Aquarii.....	62. 15	3	+ 1.72
$\epsilon$ Cygni.....	18. 48	1	+ 0.56	Spica.....	62. 37	2	+ 0.02
$\beta$ Lyræ.....	19. 1	2	- 0.47	$\alpha^1$ Capricorni.....	65. 11	3	+ 1.17
Castor.....	20. 0	4	+ 0.79	$\alpha^2$ Capricorni.....	65. 13	3	+ 0.78
$\zeta$ Persei.....	20. 46	1	+ 0.71	Sirius.....	68. 44	1	- 0.35
$\delta$ Andromedæ.....	+ 22. 10	1	- 0.14	$\beta$ Ceti.....	71. 1	1	- 0.52
				$\mu^1$ Sagittarii.....	+ 73. 19	2	+ 1.17



*Corrections for Discordance of Zenith Points and Error of the assumed Co-latitude, applied to N.P.D. obtained by direct and reflection observations in 1853.*

N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.
- 5	+ 0,34	+ 0,40	+ 40	+ 0,05	+ 0,69	+ 85	+ 0,72	+ 0,02
0	+ 0,13	+ 0,61	45	+ 0,28	+ 0,46	90	+ 0,98	- 0,24
+ 5	- 0,18	+ 0,92	50	+ 0,55	+ 0,19	95	+ 1,13	- 0,39
10	- 0,36	+ 1,10	55	+ 0,83	- 0,09	100	+ 1,18	- 0,44
15	- 0,47	+ 1,21	60	+ 1,04	- 0,30	105	+ 1,21	- 0,47
20	- 0,48	+ 1,22	65	+ 1,06	- 0,32	110	+ 1,21	- 0,47
25	- 0,42	+ 1,16	70	+ 0,77	- 0,03	115	+ 1,21	- 0,47
30	- 0,31	+ 1,05	75	+ 0,28	+ 0,46	120	+ 1,22	- 0,48
+ 35	- 0,14	+ 0,88	+ 80	+ 0,31	+ 0,43	+ 125	+ 1,22	- 0,48

The correction for the assumed colatitude is + 0",37. The number of different stars observed in 1853 for determining the discordance of the zenith point is larger than in previous years, but the curve representing the law of the discordance has nearly the same form. According to the above Table, the value of  $Z - M$  for the zenith direction is 0",40. Hence by this quantity the zenith point is *less*, or the zenith direction more *northward*, as determined by the collimating eye-piece, than as inferred from direct and reflection observations of zenith stars.

The following Circle transits of known stars were taken chiefly for the purpose of obtaining approximately the error of the clock Molyneux, the Circle being assumed to be sufficiently adjusted to the meridian.

Date.	Star.	Time of transit by clock.	Meridian transit.	Clock apparently slow.	Clock slow by calculation.	Interval from meridian to middle wire.
		<i>h. m. s.</i>	<i>h. m. s.</i>	<i>m. s.</i>	<i>m. s.</i>	<i>s.</i>
Jan. 3	$\alpha$ Ceti	2.54.14,36	2.54.35,65	0.21,29	0.20,52	- 0,77
July 9	$\alpha$ Ophiuchi	17.26.52,06	17.28. 8,46	1.16,40	1.16,25	- 0,15
July 15	$\zeta$ Aquilæ	18.57. 5,42	18.58.41,11	1.35,69	1.35,54	- 0,15
Oct. 20	$\alpha$ Pegasi	22.53.39,83	22.57.28,72	3.48,89	3.46,70	- 2,19
Nov. 8	$\alpha$ Arietis	1.54.19,68	1.58.56,75	4.37,07	4.35,72	- 1,35

The calculated errors of the clock were obtained by means of comparisons of Molyneux (M) with Hardy (H) contained in the subjoined list. These errors, however, and the rates on which they depend, are uncertain on account of the comparisons being not sufficiently near the times of observation. The rate given by the comparison of the transit of  $\alpha$  Ophiuchi on July 9 with that of  $\zeta$  Aquilæ on July 15, is assumed to hold from July 1 to July 15. The clock's error on Oct. 20 is inferred from the comparisons on Oct. 21, 25 and 30, and that on Nov. 8 from the comparisons on Oct. 30 and Nov. 16. Although the above intervals from the meridian are consequently to the same degree uncertain, they suffice to shew that the instrument was nearly adjusted to the meridian, and that the error of the clock might be inferred from Circle transits of known stars with as much accuracy as is required in the calculation of the corrections for the curvature of path of Polaris and  $\delta$  Ursæ Minoris. This method was, in fact, employed in a few instances, but generally the corrections were calculated by means of the results, which are stated in the notes, of the following comparisons of M with H.

Date.	Time by M.	Time by H.	Date.	Time by M.	Time by H.
	<i>h. m. s.</i>	<i>h. m. s.</i>		<i>h. m. s.</i>	<i>h. m. s.</i>
Jan. 8	3. 5.30,3	3. 5. 1,0	Oct. 3	1.22.20,0	1.24.35,5
Mar. 24	7.20. 8,0	7.19. 0,0	3	1.22.33,5	1.24.48,5
29	21.40.28,0	21.39.27,0	21	13.16.22,0	13.18.49,0
Apr. 26	1. 8.20,0	1. 8.12,0	25	1.25. 5,0	1.27.36,2
May 4	1.21.22,0	1.22.30,0	25	13.24.30,0	13.27. 1,0
July 1	18.29. 5,3	18.29.30,0	30	13.19.44,0	13.22.18,3
Aug. 9	21. 7.56,0	21. 7.35,0	Nov. 16	2.55.17,0	2.59. 2,3
Sept. 23	0.54.54,0	0.55.55,0	19	4.31.20,0	4.35. 7,4

H



III. *Measures of the Sun's Diameter, and concluded Right Ascensions and North Polar Distances of the Sun, and Planets; compared with Tabular values.* Pages 226—231.

This section requires, in addition to the notes inserted in it, and the explanations already given respecting the corresponding observations of 1852, only the following notices.

The adopted semidiameters of the Sun depend on Bessel's value for the mean distance, viz. 960",9, and are inferred from the semidiameters in the Nautical Almanac for 1853, by subtracting from each its thousandth part *minus* 0",042. So the interval occupied by the transit of the semidiameter is deduced by subtracting a thousandth part *minus* 0",0027.

It may be remarked with respect to the Tabular Errors of the Sun's R.A., that the values appear to change with a change of observer, owing probably to personal difference in the mode of observing the Limbs.

In all cases in which an observation of N.P.D. is not accompanied by an observation of R.A., the Greenwich Mean Time is calculated from the Tabular R.A. corrected for error of the Tables.

The observed places of the Planets are compared with places computed either from Ephemerides, or from Elements, as here indicated.

*Euterpe.* The Tabular R.A., N.P.D., and Log-distance, were computed from the Elements in the *Astronomische Nachrichten*, Vol. xxxix. col. 247. The variations of R.A. and N.P.D. for the calculation of corrections for aberration were inferred from the calculated places, excepting those of Dec. 2, 9, and 12, which were obtained from observations taken at Vienna and Bonn.

*Metis.* The Tabular quantities were computed from the Elements in the *Berliner Jahrbuch* for 1855, p. 370. The aberration-corrections on Oct. 20 and 25, were deduced from the Ephemeris in the Nautical Almanac for 1856, p. 605. The rest were inferred from the calculated places, with the exception of those on Dec. 12 and 23, which were obtained from observations at Kremsmünster and the Cambridge place of Dec. 23.

*Thetis.* The Elements adopted for computing the Tabular quantities were interpolated proportionally to the time, from two sets, one in the *Berliner Jahrbuch* for 1858, p. 407, and the other in that for 1859, p. 419. The aberration-corrections were inferred, for Sept. 24, from Greenwich observations, and for Nov. 1, from the calculated place of that day, compared with places which were calculated for Oct. 31 and Nov. 3 in order to test supposed observations of the Planet taken on those days.

*Astræa.* The Tabular R.A., N.P.D., and Log-distance were interpolated from the Ephemeris in the *Astronomische Nachrichten*, Vol. xxxvii. col. 39, from which also the aberration-corrections were deduced.

*Irene.* The Tabular quantities and the aberration-corrections were calculated from the Ephemeris in the *Astronomische Nachrichten*, Vol. xxxvi. col. 193.

*Calliope.* The observed place is compared with the Ephemeris in the *Astronomische Nachrichten*, Vol. xxxvi. col. 282, just as the observations of 1852 were compared with that Ephemeris. (See p. xxxii.)

*Hygeia.* The observed places are compared with the same Ephemeris as were those of 1852, and in the same manner. (See p. xxxii.)

*Neptune.* The observations are compared with the Ephemeris in the Appendix to the American Nautical Almanac for 1855.

The numbers in the columns headed 'number of wires' include transits at bars.

The calculation of the *Position of the Ecliptic* and of the *Mean Error of the assumed R.A. of the Fundamental Stars*, and the *Calculation of the Occultations*, were performed exactly as those of the preceding year.



## OBSERVATIONS OF 1854.

The arrangement of the Sections relating to the observations of 1854 is the same as that for the observations of 1852 and 1853, excepting that the Catalogue of concluded Right Ascensions of Stars is placed after, instead of being before, the observations of North Polar Distances. This change was made in order to gain time, while the printing was going on, for deciding by Equatorial observations various doubtful points relating to the places and identity of stars in that Catalogue. The explanations given in the previous part of the Introduction apply generally to the printed observations of 1854.

I. *Apparent Right Ascensions observed with the Transit.* Pages 248—291.

The wire-intervals in page xxxiv. and the bar-intervals in page xxxv. are used throughout the year 1854. For the observations of 51 (Hev.) Cephei the required intervals were specially calculated from those for the declination  $88^{\circ}.32'$ , by multiplying the latter by the ratio of the cosine of that declination to the cosine of the apparent declination of the star.

The corrections for the forms of the pivots used for the transits of 1854 are given in p. xlv.

*Determination of Collimation Errors in 1854.*

The measures taken at the reversion of the Instrument on Jan. 3, which have been already adduced in p. xlviii. gave for the concluded error of collimation, Illumination West,  $-4''.32$ , which is used on Jan. 2. By the same measures the concluded error of collimation, Illumination East, is  $+3''.14 + 0''.82 = +3''.96$ , which is used from Jan. 7.

April 4, 2<sup>h</sup>, the mean of nine readings for coincidence of the micrometer-wire with its image was  $10^{\circ}.115$ , and the mean of eight readings for coincidence with *D*,  $10^{\circ}.294$ . Hence as the Illumination was East,  $10^{\circ}.115 - 10^{\circ}.294 = -0^{\circ}.179 = -3''.05 = b$ . After the reversion the mean readings for coincidence of the micrometer-wire with its image and with *D*, by six trials in each case, were respectively  $10^{\circ}.093$  and  $10^{\circ}.296$ . Hence  $10^{\circ}.296 - 10^{\circ}.093 = +0^{\circ}.203 = +3''.46 = a$ . Consequently  $\frac{1}{2}(a - b) = +3''.25$ , and the concluded error of collimation is  $+3''.25 + 0''.82 = +4''.07$  for Illumination East, and  $-3''.25 - 1''.18 = -4''.43$ , for Illumination West.

Like measures were taken on April 6 and April 12, resulting as follows.

Date.	Position of Illumination.	Number of readings.	Coincidence with image.	Number of readings.	Coincidence with <i>D</i> .	Value of <i>a</i> .	Value of <i>b</i> .
Apr. 6.6	West	6	10,159	6	10,334	+2,99	"
6.6	East	9	10,136	6	10,315		-3,05
12.3	East	7	10,116	6	10,305		-3,22
12.3	West	6	10,164	7	10,307	+2,44	

Hence, calculating as above, the concluded errors of collimation by the measures of April 6 and April 12 are respectively  $+3''.84$ ,  $+3''.65$ , Illumination East, and  $-4''.20$ ,  $-4''.01$ , Illumination West. Combining these results with those of April 4, the means of all are  $+3''.85$  for Illumination East, and  $-4''.21$  for Illumination West. These values are used from Feb. 20 to June 1.

June 9, 3 $\frac{1}{2}$ <sup>h</sup>, the following measures were taken for collimation error. A speck on one of the horizontal wires was bisected four times with the micrometer-wire and as many times with its image, and the mean of the eight readings was  $10^{\circ}.167$ . The mean of three readings for coincidence with the image being at the same time  $10^{\circ}.175$ , the adopted mean was  $10^{\circ}.170$ . Hence, as the mean of seven readings for coincidence with *D* was  $10^{\circ}.299$ ,

$a = +0^{\circ}.129 = +2''.20$ . By levelling June 9,  $3^h$ ,  $L_w = -2''.82$ . Hence by the formula obtained in p. xlvii. the concluded error of collimation  $= -2''.82 - 2''.20 + 1''.54 = -3''.48$ . At  $4\frac{1}{2}^h$  of the same day the wire-frame was shifted to diminish the collimation error, and at the same time the eye-piece was moved by the adjusting screws mentioned in p. xlvii. to equalize the distances of the wires and their images from the object-glass. By five bisections of a speck with the micrometer-wire and as many with its image, the micrometer reading for coincidence with the vertical plane through the optical centre of the object-glass was found to be  $10^{\circ}.351$ . The method of equidistant intervals between the micrometer-wire, the wire  $D$ , and their images, gave exactly the same result. The mean of six readings for coincidence with  $D$  was  $9^{\circ}.971$ , so that  $a = 9^{\circ}.971 - 10^{\circ}.351 = -0^{\circ}.380 = -6''.48$ . Hence by the formula above cited, the concluded error of collimation  $= -2''.82 + 6''.48 + 1''.54 = +5''.20$ . The value actually used from June 9 is  $+4''.5$ , which through inadvertence did not take into account the effect of heat from the observer.

Being much engaged with an experiment for ascertaining the effect of the flexure of the Mural Circle, I did not again determine the collimation error of the Transit till Feb. 22 of 1855. The value obtained for Illumination West by a reversion of the instrument on that day was  $+5''.8$ , which seems to shew that there had been little change in the interval from June 9. It is, therefore, probable that the value  $+4''.5$  used to the end of the year is not erroneous to an amount which, if corrected, would sensibly alter the apparent R.A.

### Level Errors in 1854.

\* \* See page viii.

Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.	Time of Levelling.	Level Error.	Position of Illum. End of Axis.	Temperature.
Jan. 3. $1^h$	$+6.84$	East	$25^{\circ}$	Apr. 12. $5^h$	$-1.49$	West	$51^{\circ}$	Aug. 14. $1\frac{1}{2}^h$	$-0.86$	West	$67^{\circ}$
14. 2	$+7.38$	—	39	12. 5	$-1.10$	—	51	21. 2	$-1.94$	—	64
14. 2	$+1.46$	—	—	20. 2	$-0.39$	—	63	28. $1\frac{3}{4}$	$-0.47$	—	69
23. 2	$+1.05$	—	43	24. 2	$-1.69$	—	45	Sept. 4. 2	$-0.81$	—	66
31. 2	$+0.78$	—	50	May 2. 2	$-0.17$	—	53	11. 2	$-1.93$	—	69
Feb. 7. 2	$+0.86$	—	49	8. 2	$-0.48$	—	52	19. 2	$-1.42$	—	64
16. $1\frac{3}{4}$	$+0.77$	—	38	18. 2	$-0.42$	—	53	26. 2	$-0.90$	—	59
25. 2	$+0.61$	—	45	24. 2	$-0.71$	—	54	Oct. 4. 2	$-1.36$	—	57
27. 2	$+0.36$	—	46	31. 2	$-0.68$	—	57	11. 21	$-1.29$	—	52
Mar. 13. 21	0.00	—	49	June 9. $2\frac{3}{4}$	$-0.77$	—	56	23. 2	$-0.78$	—	52
21. 21	$-0.57$	—	46	12. 2	$-1.19$	—	58	31. —	$-0.86$	—	53
31. 21	$-0.06$	—	50	20. $2\frac{1}{4}$	$-0.91$	—	59	Nov. 7. 2	$-0.39$	—	—
Apr. 4. 1	$-1.01$	—	52	27. 2	$-1.82$	—	59	13. $1\frac{1}{2}$	$-0.02$	—	44
4. 5	$-0.88$	West	53	July 3. $2\frac{3}{4}$	$-0.76$	—	65	20. $1\frac{1}{4}$	$+0.19$	—	42
6. 6	$-0.46$	—	53	10. $2\frac{1}{4}$	$-1.04$	—	59	29. 1	$+1.00$	—	43
6. 7	$-0.85$	East	53	17. $1\frac{3}{4}$	$-0.55$	—	61	Dec. 5. $1\frac{1}{4}$	$+0.72$	—	47
10. 2	$-0.79$	—	52	24. $1\frac{1}{2}$	$-0.47$	—	76	12. 1	$+0.79$	—	41
12. 1	$-1.08$	—	51	31. $1\frac{3}{4}$	$-0.85$	—	67	18. $1\frac{1}{4}$	$+1.02$	—	39
12. 1	$-1.44$	—	51	Aug. 7. $1\frac{1}{4}$	$-1.04$	—	59				

The level error of Jan. 3, and the first of Jan. 14, were obtained by the collimating eye-piece, the amount being too large for reading off the ends of the bubble in a low temperature. The former is half the sum of the values of  $a$  and  $b$  given in p. xlviii. corrected by  $-0''.67$  for the effect of heat from the observer, and the other was deduced from that of Jan. 3 by adding  $0''.54$ , it being found by measures taken on Jan. 14, that the value of  $b$  had increased in the interval by that quantity. After these measures the screws were turned to diminish the level error, and the second of Jan. 14 was taken with the spirit-level.

All the others are level errors given by the spirit-level, corrected by  $+2''.05$  when the Illumination is West, and by  $-0''.65$  when the Illumination is East, these being the correct values, as stated in p. xlv.



of  $l - L_w$  and  $l - L_e$ . The corrections of level error used in the reduction of the transits, are taken to the nearest tenth of a second from the above Table.

On Feb. 16, and on Nov. 29, the levelling had been delayed on account of the length of the bubble from low temperature. On March 31, the bubble ends were read off ten times, but the change of readings was so great that the resulting level error is uncertain. Previously (on March 28) a class of students had been in the Transit room and the spring of the West counterpoise was stirred. The second levelling of April 6 I took by lamp-light, Mr Todd holding the lamp at some distance from the level. On July 24 the bubble was much contracted by the high temperature. The levelling of Aug. 21 was taken under bad circumstances, the south shutters being closed on account of rain, and the scale-divisions not well seen.

In all the levellings used for the reduction of the observations the Telescope was horizontal and pointed southward, the adopted values of  $l - L_w$  and  $l - L_e$  applying only to this position. In the second levelling of April 6, and the second and third levellings of April 12, the Telescope pointed horizontally *northward*. These were taken for the purpose of comparing levellings in reverse positions of the instrument, with the feet of the level applied to the *same* points of the pivots. It appears from the uncorrected levellings of April 6, that the apparent level error is *less* by  $2''.31$  when the pointing is southward and Illumination West, than when the pointing is northward and Illumination East, and from the second and fourth levellings of April 12 that it is less by  $2''.36$  under the same circumstances. By the first and third levellings of April 12, the apparent level error is *greater* by  $3''.11$  when the pointing is southward and Illumination East, than when the pointing is northward and Illumination West. In the last instance the points of the pivots in contact with the feet of the level are opposite to those in the other two. These differences are entirely due to the pivots being different in size and form.

The corrections for the apparent inequality of the radii of the pivots, calculated in the manner cited in p. x. are  $-0''.59$  from the levellings of April 4,  $-0''.63$  from the first and fourth levellings of April 12, and  $-0''.64$  from the second and third.

*Calculation of Azimuth Errors in 1854.*

Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h' - h$ .	Azimuth Error.	Remarks.
Jan. 13. 23 14. 5	$\delta$ Ursæ Minoris $\beta$ Ceti	26.99 29.58	+	9.11 14.56	+ 2.38	+ 0.702	+ 3.39*	* Used from Jan. 7, after the Transit had been reversed. The value used on Jan. 2 was obtained on Dec. 30, 1853.
24. 22 28. 10	$\delta$ Ursæ Minoris $\delta$ Ursæ Min. SP.	8.38 57.66	+ 6.44	10.36 10.79	+ 4.71	+ 1.375	+ 3.43	By mistake + $3''.5$ was used.
Feb. 1. 21 2. 9	$\delta$ Ursæ Minoris $\delta$ Ursæ Min. SP.	54.11 49.82	+ 0.89	11.72 11.84	+ 3.52	+ 1.375	+ 2.56	
5. 21 6. 9	$\delta$ Ursæ Minoris $\delta$ Ursæ Min. SP.	48.85 44.81	+ 0.87	12.59 12.69	+ 3.27	+ 1.375	+ 2.38	
16. 3 17. 9	Polaris Sirius.	48.65 56.08	+ 2.36	28.86 43.41	+ 4.76	+ 1.608	+ 2.96	
16. 3 17. 10	Polaris Pollux	48.65 36.14	+ 2.44	28.86 23.19	+ 4.40	+ 1.574	+ 2.80	The mean of these four values, viz. + $2''.27$ , is used from Feb. 13. A comparison of these results seems to shew that high and low stars give accordant values, but that the assumed R.A. of Polaris and $\delta$ Ursæ Minoris are not consistent with each other.
17. 9 17. 9	$\delta$ Ursæ Min. SP. Sirius	27.11 56.08	+ 0.02	15.44 43.41	- 1.02	- 0.675	+ 1.51	
17. 9 17. 10	$\delta$ Ursæ Min. SP. Pollux	27.11 36.14	+ 0.10	15.44 23.19	- 1.28	- 0.709	+ 1.81	

Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h'-h$ .	Azimuth Error.	Remarks.
Feb. 25. 7 25. 9	$\beta$ Tauri $\delta$ Ursæ Min. SP.	1,66 14,45	+	3,69 17,67	+ 1,10	+ 0,710	+ 1,55	The value +2'',29, used from Feb. 20, is obtained by giving to these two determinations weights proportional to the number of wires at which the polar stars were observed.
27. 2 27. 11	Polaris $\alpha$ Hydræ	20,62 19,03	+ 0,70	22,12 25,61	+ 4,38	+ 1,601	+ 2,74	
Mar. 6. 2 6. 7	Polaris $\alpha$ Orionis	4,16 55,93	+ 0,38	18,87 16,00	+ 4,98	+ 1,590	+ 3,13	The mean of these two is +2'',48, which is used.
9. 2 9. 6	Polaris Rigel	54,95 5,13	+ 0,33	17,63 31,08	+ 2,94	+ 1,602	+ 1,84	
23. 13 23. 13	Polaris SP. Spica	19,33 39,58	+ 0,02	13,09 31,35	- 2,01	- 1,589	+ 1,26	
30. 13 31. 1 31. 12 Apr. 1. 0	Polaris SP. Polaris Polaris SP. Polaris	4,31 6,40 1,10 6,44			- 2,09 + 5,30 - 5,34	- 3,192 + 3,192 - 3,192	+ 0,65 + 1,66 + 1,67	The mean of the first and second values is +1'',16, and the mean of the second and third, +1'',66. The mean of these two results, viz. +1'',41 is used from Mar. 27.
4. 12 5. 0 5. 12	Polaris SP. Polaris Polaris SP.	44,93 11,15 43,83			- 26,22 + 27,32	- 3,192 + 3,192	+ 8,39	Before these observations the instrument had been reversed.
7. 0 7. 12	Polaris Polaris SP.	55,95 51,84	+ 0,68	11,91 11,90	+ 3,42	+ 3,192	+ 1,07	Polaris at only two wires. The instrument had been again reversed.
10. 0 10. 12 11. 0 11. 12	Polaris Polaris SP. Polaris Polaris SP.	54,63 47,02 51,64 47,57			+ 7,61 - 4,62 + 4,07	+ 3,192 - 3,192 + 3,192	+ 1,91 + 1,36	The mean between the two results is adopted.
12. 12 13. 0 13. 12	Polaris SP. Polaris Polaris SP.	33,93 59,52 31,54			- 25,59 + 27,98	- 3,192 + 3,192	+ 8,39	Before these the instrument was reversed.
19. 11 19. 23	Spica Polaris	57,26 50,07	+ 0,49	31,59 13,73	- 11,16	- 1,603	+ 6,96	
May 4. 21 4. 22	$\alpha$ Andromedæ Polaris	55,15 40,08	+ 0,07	49,80 18,88	- 15,92	- 1,574	+ 10,11	Change of observer.
11. 12 11. 22	$\alpha$ Serpentis Polaris	1,35 32,60	+ 0,65	6,21 22,19	- 15,92	- 1,591	+ 10,01	
14. 21 15. 10	Polaris Arcturus	26,66 50,59	+ 0,83	24,14 1,63	+ 12,73	+ 1,581	+ 8,05	
16. 21 19. 9 19. 21	Polaris Polaris SP. Polaris	25,97 54,85 23,60	- 3,72 + 0,74	25,24 26,47 26,74	+ 28,63 - 29,22	+ 3,192 - 3,192	+ 9,06	Equal weights being given to the two determinations.
June 13. 8 13. 8	Polaris SP. Spica	35,48 36,40	+ 0,01	44,67 31,49	- 14,11	- 1,589	+ 8,88	
17. 8 17. 8	Polaris SP. Spica	33,18 30,13	+ 0,01	47,49 31,45	- 13,00	- 1,589	+ 8,18	
23. 7 23. 9	Polaris SP. $\alpha^2$ Libræ	31,22 39,41	+ 0,10	52,82 50,06	- 11,05	- 1,585	+ 6,97	
July 8. 6 8. 6	Polaris SP. Spica	21,75 4,79	+ 0,01	5,46 31,27	- 17,24	- 1,589	+ 10,85	The mean of these is used from July 3. On that day the observer was changed, but the same discordance between the determinations by Polaris and $\delta$ Ursæ Minoris occurs as on former occasions.
8. 11 8. 12	$\delta$ Ursæ Minoris $\gamma$ Aquilæ	23,21 54,56	+ 0,06	43,43 21,13	+ 6,29	+ 0,680	+ 9,25	
15. 6 15. 7	Polaris SP. Arcturus	24,01 26,76	+ 0,06	10,84 1,24	- 12,41	- 1,611	+ 7,70	



Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $k'-h$ .	Azimuth Error.	Remarks.
July 18. 5 18. 5	Polaris SP. Spica	19,78 52,50	+ 0,01	13,47 31,16	- 15,04	- 1,589	+ 9,46	The mean of the three values of July 15, 18 and 19, viz. +8'',98, is used from July 15.
19. 5 19. 5	Polaris SP. Spica	18,75 51,03	+ 0,01	14,38 31,15	- 15,52	- 1,589	+ 9,77	
21. 5 21. 6	Polaris SP. Arcturus	18,59 18,47	+ 0,07	16,16 1,17	- 14,94	- 1,611	+ 9,27	The mean of these three, viz. +8'',59, is used.
24. 5 24. 5	Polaris SP. Spica	16,43 44,02	+ 0,01	18,58 31,10	- 15,08	- 1,589	+ 9,49	
25. 10 25. 10	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris	15,56 56,07	+ 0,01	4,37 39,97	- 4,92	- 0,703	+ 7,00	
Aug. 1. 4 1. 7	Polaris SP.* $\alpha$ Serpentis	15,72 10,02	+ 0,12	24,49 6,11	- 12,80	- 1,601	+ 8,00	* At two wires. † At three wires. The transit of $\delta$ Ursæ Min. Aug. 1, which is not inserted among the observations, was taken at wires II and III, the seconds being 20,5 and 6,5 respectively. The azimuth error it gives is not used, the mean of the other two values being adopted: but probably the mean of the three, viz. +6'',8, would be better.
1. 10 1. 12	$\delta$ Ursæ Minoris $\alpha^2$ Capricorni	44,53 3,02	+ 0,09	38,28 59,58	+ 2,72	+ 0,697	(+ 3,90)	
2. 9 2. 10	$\mu^1$ Sagittarii $\delta$ Ursæ Minoris†	6,75 46,29	+ 0,01	4,37 38,01	- 5,91	- 0,703	+ 8,41	
11. 4 11. 4	Polaris SP. Spica	14,20 21,79	+ 0,01	31,69 30,90	- 8,39	- 1,589	+ 5,28	The mean of these three is used from Aug. 7.
12. 4 12. 10	Polaris SP. $\gamma$ Aquilæ	15,01 10,62	+ 0,39	32,37 21,31	- 7,06	+ 1,604	+ 4,40	
14. 4 14. 4	Polaris SP. Spica	10,48 17,57	+ 0,01	33,87 30,87	- 10,10	- 1,589	+ 6,36	
18. 3 18. 3	Polaris SP. Spica	8,61 12,05	+ 0,01	36,84 30,83	- 9,46	- 1,589	+ 5,95	The mean between these is used from Aug. 16.
24. 8 24. 9	$\delta$ Ursæ Minoris $\gamma$ Aquilæ	7,01 53,48	+ 0,08	30,59 21,25	+ 4,11	+ 0,680	+ 6,04	
28. 3 28. 5	Polaris SP. $\alpha$ Serpentis	57,23 32,09	+ 0,17	42,44 5,74	- 11,73	- 1,601	+ 7,33	The mean of these four is used from Aug. 28.
29. 3 29. 3	Polaris SP. Spica	54,97 55,40	+ 0,01	43,08 30,73	- 12,79	- 1,589	+ 8,05	
30. 3 30. 3	Polaris SP. Spica	54,54 53,76	+ 0,01	43,75 30,72	- 12,26	- 1,589	+ 7,72	
31. 8 31. 8	$\delta$ Ursæ Minoris $\zeta$ Aquilæ	54,36 5,33	+ 0,03	28,00 43,91	+ 4,91	+ 0,678	+ 7,24	
Sept. 4. 2 4. 2	Polaris SP. Spica	51,37 46,24	+ 0,01	46,39 30,69	- 10,58	- 1,589	+ 6,66	Polaris SP. was observed at two wires on Sept. 22, at one wire on Sept. 25, and at six wires on Sept. 26. The weight of each result being taken proportional to the number of wires, the first and second give +6'',72, which is used from Sept. 19, and the second and third give +9'',35, which is used from Sept. 24.
15. 1 15. 2	Polaris SP. Arcturus	39,02 0,69	+ 0,06	51,27 0,44	- 12,56	- 1,611	+ 7,80	
21. 22 22. 1	Regulus Polaris SP.	26,72 34,02	+ 0,18	35,95 53,10	+ 9,67	+ 1,605	+ 6,02	
25. 1 25. 7	Polaris SP. $\gamma$ Aquilæ	27,57 7,03	+ 0,37	54,05 20,86	- 13,02	- 1,604	+ 8,12	
26. 1 26. 2	Polaris SP. Arcturus	24,08 45,35	+ 0,06	54,42 0,35	- 15,40	- 1,611	+ 9,56	
Oct. 3. 0 3. 12 4. 0	Polaris SP. Polaris Polaris SP.	17,86 44,65 14,33			- 26,79 + 30,32	- 3,192 + 3,192	+ 9,00	

Approximate Mean Time of Observation.	Star.	Seconds of transit corrected for Collimation and Level Errors.	Correction for rate of Clock.	Seconds of the Star's assumed R.A.	Azimuthal Correction of the Interval between the transits.	Value of $h - h'$ .	Azimuth Error.	Remarks.
Oct. 7. 0 7. 7	Polaris SP. $\gamma$ Aquilæ	13,39 50,56	+ 0,38	56,14 20,67	- 13,02	- 1,604	+ 8,12	Not used.
10. 0 10. 12	Polaris SP. Polaris	7,74 35,34	+ 0,77	56,69 56,76	- 26,76	- 3,192	+ 8,38	Polaris at two wires.
15. 23 16. 23 17. 1	Polaris SP. Polaris SP. Arcturus	60,47 59,10 17,08	+ 0,68	56,80 56,68 60,30	- 14,41	- 1,611	+ 8,94	The mean of the two observations of Polaris SP. is used as a single observation.
23. 22 24. 0	Polaris SP. Arcturus	46,99 8,52	+ 0,05	56,30 0,33	- 17,55	- 1,611	+ 10,89	The mean of these two is adopted.
26. 22 27. 0	Polaris SP. Arcturus	43,62 4,84	+ 0,06	55,59 0,35	- 16,52	- 1,611	+ 10,25	
31. 22 Nov. 2. 9 2. 21	Polaris SP. Polaris Polaris SP.	35,55 59,45 32,62	- 2,41 + 0,80	54,65 54,29 54,18	- 26,67 + 25,92	- 3,192 + 3,192	+ 8,36 + 8,12	Inadvertently the latter of these was used instead of the mean between the two.
5. 22 6. 22 7. 10	Polaris SP. Polaris SP. Polaris	23,42 22,74 57,20	+ 1,63	53,66 53,44 53,33	- 35,97	- 3,192	+ 11,27	Polaris SP. was observed at two wires on Nov. 5, and at three wires on Nov. 6. The mean between the two observations is used as a single observation.
8. 10 8. 22 9. 10	Polaris Polaris SP. Polaris	53,17 19,61 52,79			+ 33,56 - 33,18	+ 3,192 - 3,192	+ 10,45	
22. 9 26. 21	Polaris Polaris SP.	38,06 54,93	+ 3,21	47,31 44,61	- 37,22	- 3,192	+ 11,66	Equal weights given to the observations with and without the micrometer-wire on Nov. 22.
Dec. 5. 8 5. 8	$\beta$ Ceti Polaris	41,58 19,16	+ 0,03	18,28 39,87	- 16,02	- 1,610	+ 9,95	On each day the same weight is given to the observation with the micrometer as to the other. The mean of the two results is used from Dec. 3.
7. 8 7. 8	$\beta$ Ceti Polaris	38,82 16,38	+ 0,03	18,26 38,57	- 16,28	- 1,610	+ 10,11	
16. 8 16. 8	$\beta$ Ceti Polaris	28,29 57,88	+ 0,03	18,16 31,99	- 15,79	- 1,610	+ 9,81	This value is used from Dec. 14 to the end of the year.

In those instances in which Polaris was observed at the micrometer-wire as well as at the other wires, all the transits are taken into account, either by adopting the mean of the two results, or by giving each a weight proportional to the respective number of transits. The assumed apparent R.A. in the above calculations are the R.A. of the Nautical Almanac, corrected by the excesses given in the Table of the assumed mean R.A. of the Fundamental Stars, and in the cases of Polaris and  $\delta$  Ursæ Minoris, by the small quantities in pages 478 and 479 of the Nautical Almanac of 1854. In the reduction of the observations the values of the azimuth error are taken to the nearest tenth of a second.

The observations taken at the bars are corrected for discrepancy between wire- and bar-transits, on the principles stated in page lii. The required corrections were deduced from comparisons of the result of all the contemporaneous transits at wires and bars taken by the different observers in 1854. In accordance with the mean results of these comparisons, Mr Breen's bar-transits of objects that were taken also with wires, are corrected by  $-0^s.20$ , and those of objects too faint for observation at the wires, by  $-0^s.26$ . The corrections of Mr Todd's bar-transits are  $-0^s.17$  for the faintest class of objects, and  $-0^s.12$  for all that were at the same time observed at wires, except very bright objects. Mr Todd took a considerable number of clock-stars simultaneously at wires and bars, and a comparison of the results shewed that the bar-transits required the mean correction  $-0^s.24$ . Accordingly this correction has been applied in those instances, and the bar-transits thus corrected are combined with the wire-transits, in the proportion of the number of bars to the number of wires, to obtain the clock-time of meridian



transit, from which the clock-error is inferred. Mr Criswick's simultaneous wire- and bar-transits were too few for deducing corrections with certainty, but from those that were taken it was thought right to correct his bar-transits of objects readily seen by  $+0^s.03$ , and those of very faint objects by  $-0^s.07$ .

*Assumed Mean R.A. Jan. 1, 1854, of the Fundamental Stars.*

Star.	Assumed Mean R.A. Jan. 1, 1854.	Excess above the R.A. of Naut. Alm. 1854.	Star.	Assumed Mean R.A. Jan. 1, 1854.	Excess above the R.A. of Naut. Alm. 1854.
$\alpha$ Andromedæ..	<i>h. m. s.</i> 0. 0. 50,92	+ 0,05	Arcturus.....	<i>h. m. s.</i> 14. 9. 0,17	+ 0,04
$\beta$ Ceti.....	0. 36. 15,60	+ 0,19	$\epsilon$ Bootis.....	14. 38. 36,62	+ 0,01
Polaris.....	1. 6. 13,38	+ 1,49	$\alpha^2$ Libræ.....	14. 42. 48,63	+ 0,14
$\alpha$ Arietis.....	1. 58. 57,10	+ 0,07	$\alpha$ Coronæ.....	15. 28. 30,41	+ 0,05
$\alpha$ Ceti.....	2. 54. 39,15	+ 0,06	$\alpha$ Serpentis...	15. 37. 4,76	+ 0,08
Aldebaran.....	4. 27. 32,83	+ 0,02	$\delta$ Ophiuchi....	16. 6. 41,94	+ 0,12
Rigel.....	5. 7. 31,43	+ 0,10	Antares.....	16. 20. 27,78	+ 0,09
$\beta$ Tauri.....	5. 17. 3,91	- 0,01	$\alpha$ Herculis.....	17. 7. 59,52	+ 0,10
$\alpha$ Orionis.....	5. 47. 16,13	+ 0,04	$\alpha$ Ophiuchi....	17. 28. 9,56	+ 0,14
Sirius.....	6. 38. 42,94	+ 0,03	$\mu^1$ Sagittarii....	18. 5. 2,06	+ 0,19
Castor.....	7. 25. 16,67	+ 0,02	$\delta$ Ursæ Minoris.	18. 19. 26,00	- 0,43
Procyon.....	7. 31. 39,52	+ 0,20	$\beta$ Lyræ.....	18. 44. 41,40	+ 0,08
Pollux.....	7. 36. 22,52	- 0,01	$\zeta$ Aquilæ.....	18. 58. 42,02	+ 0,13
$\epsilon$ Hydræ.....	8. 39. 2,54	+ 0,02	$\gamma$ Aquilæ.....	19. 39. 19,12	+ 0,06
$\alpha$ Hydræ.....	9. 20. 24,83	+ 0,16	$\alpha$ Aquilæ.....	19. 43. 39,60	+ 0,10
Regulus.....	10. 0. 35,57	+ 0,05	$\beta$ Aquilæ.....	19. 48. 8,54	+ 0,12
$\delta$ Leonis.....	11. 6. 20,29	+ 0,04	$\alpha^2$ Capricorni...	20. 9. 57,13	+ 0,19
$\beta$ Leonis.....	11. 41. 36,62	+ 0,10	$\beta$ Aquarii.....	21. 23. 52,31	+ 0,15
$\beta$ Corvi.....	12. 26. 43,65	+ 0,26	$\alpha$ Aquarii.....	21. 58. 17,08	+ 0,16
Spica.....	13. 17. 30,46	+ 0,13	$\alpha$ Pegasi.....	22. 57. 29,46	+ 0,06

The assumed mean R.A. have been deduced from the mean R.A. concluded from the observations of 1853, in the manner stated in page xiv. The mean excess above the R.A. of the Nautical Almanac (excluding Polaris and  $\delta$  Ursæ Minoris), is  $+0^s.093$ , which is the same as the mean excess of the assumed R.A. of 1853.

The transits to which the Italic *C* is opposite in the last column were taken by Mr Criswick. The earlier transits, being taken for trial, are confined to bright objects.

In estimating the clock's rate from the observations of Feb. 18 and 20, the difference of personal equation between B and T is taken into account, B being supposed from previous determinations to observe earlier than T by  $0^s.30$ . The rate from T's transits on Feb. 25 compared with B's on Feb. 27, agrees well with the rate from T's transits on Feb. 24 and 25, and with that from B's on Feb. 27 and 28; from which it would seem that the difference of personal equation is not constant. No corrections have been applied for difference of personal equation of B and C, the contemporaneous observations on May 25 and 26, as well as the observations by the two observers on Aug. 31 and Sept. 1, and on Oct. 31 and Nov. 1, indicating that they observed very nearly alike.

It was noted in the course of calculating the clock's rate, that it appeared to be affected by changes of temperature between April 9 and April 11, between April 20 and April 24, and between Nov. 10 and Nov. 14. It may also be remarked that although the azimuth error, calculated on the supposition of cylindrical and equal pivots, alters very considerably on reversing the Transit, the clock's rate appears to be unaffected. For instance, the azimuth error on April 5, the Illumination being East, was  $+8''.4$ , and on April 6, Illumination West,  $+1''.1$ ; while the clock's rate was  $1^s.40$  (see Errata) on the former day, and  $1^s.34$  on the latter. So by the reversion on April 11—12 the azimuth error changed from  $+1''.6$  to  $+8''.4$ , but the change of rate was only from  $1^s.36$  to  $1^s.40$ . These results shew that the errors induced by supposing the pivots to be equal and cylindrical, are removed by the corrections for the forms of the pivots.

In a few instances, when it was necessary from the paucity of observations of clock-stars, to infer the error of the clock for several days from the errors on one day, the rate has not been supposed to be constant during the whole interval, but to vary proportionally to the time. This is done in calculating the clock-errors of June 26—30 and those of Nov. 10—14.



II. *Apparent North Polar Distances observed with the Mural Circle.* Pages 294—322.

Circle observations were suspended between Oct. 3 and Oct. 21 and between Oct. 26 and Nov. 17, during which intervals two moveable collimators were mounted for the purpose of determining the effect of flexure on the circle readings for any zenith distance, and an aperture was made through the tube of the Telescope to allow of the collimation.

*Corrections for Runs in 1854.*

Time of Observation, 1854.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.		Time of Observation, 1854.	Excess of micrometer-reading for preceding division above micrometer-reading for following division, for each microscope.						Corr. for Runs for 5'.	Temperature.
	A	B	C	D	E	F					A	B	C	D	E	F		
Jan. 3. <sup>h.</sup>	+1,5	+4,6	-1,7	+2,3	+2,9	+3,2	+12,8	30		June 12. <sup>h.</sup>	+0,5	-1,0	-2,5	+1,5	+0,6	+0,5	-0,4	57
13. 2	+1,6	+5,7	-3,2	+3,2	+1,7	+1,6	+10,6	36		19. 0	+2,0	-2,7	-3,5	+0,9	-1,1	+0,3	-4,1	60
13. 2	+1,3	+4,2	-1,5	+1,8	+1,8	+3,5	+11,1			19. 0	-0,3	-1,0	-4,2	+0,9	+1,0	+0,9	-2,7	
24. 22	+1,0	+4,3	-2,4	+2,3	+0,4	+3,0	+8,6			26. 1	+0,4	-1,6	-3,8	+1,5	+0,9	-1,2	-3,8	
31. 2	+0,6	+3,5	-2,8	+1,5	+1,4	+3,3	+7,5	48		26. 1	-0,1	-3,2	-3,3	+1,3	+1,5	+0,9	-2,9	68
Feb. 7. 2	+0,8	+3,7	-2,5	+1,0	+1,3	+3,0	+7,3	49		July 3. 0	+0,2	+0,3	-2,0	+1,8	+0,9	+1,0	+2,2	
7. 2	+0,9	+4,0	-2,4	+1,4	+1,8	+2,8	+8,5			11. 2	+0,4	-0,4	-2,2	+1,6	+0,7	+1,0	+1,1	56
13. 11	+1,1	+0,6	-1,8	+2,6	+0,9	+1,9	+5,3	34		11. 2	+0,8	+0,4	-2,2	+0,9	+0,7	+0,7	+1,3	
14. 2	+1,1	0,0	-2,0	+3,7	+0,3	+1,0	+4,1	37		20. 2	+0,7	+0,4	-3,1	+1,9	+0,8	0,0	+0,7	
27. 2	+0,9	+0,4	-2,8	+2,0	+1,7	+1,5	+3,7	45		20. 2	+0,6	0,0	-3,1	+0,4	+0,6	+1,2	-0,3	
27. 2	+0,6	+0,3	-3,3	+1,3	+1,3	+1,9	+2,1			Aug. 1. 21	+0,6	0,0	-2,6	+1,0	+1,6	+0,1	+0,7	62
Mar. 6. 2	+1,6	-1,0	-2,3	+1,2	+1,4	0,0	+0,9	42		11. 9	+0,1	+1,5	-3,0	+1,1	+1,1	-1,1	-0,3	64
6. 2	+0,3	+0,3	-2,0	+2,8	+2,5	+0,3	+4,2			11. 11	+0,4	0,0	-3,4	+1,1	+1,1	-1,2	-2,0	63
20. 2	+0,9	+0,5	-2,5	+1,7	+2,1	+0,3	+3,0	42		19. 3	-1,2	-0,4	-2,8	+0,9	+0,8	-1,1	-3,8	62
20. 2	+0,8	+0,2	-2,2	+1,1	+1,6	+0,2	+1,7			26. 4	+0,1	-1,6	-3,3	+1,4	+0,1	-1,1	-4,4	65
28. 22	+1,1	+0,2	-2,9	+1,8	+1,8	+0,6	+2,6	49		26. 4	-0,2	-1,0	-2,0	+0,9	+0,8	-1,1	-2,6	
28. 22	+1,5	+1,0	-2,4	+1,6	+1,0	+0,3	+3,0			Sept. 4. 21	+0,2	+0,3	-2,8	+2,1	+0,5	-1,4	-1,1	63
Apr. 2. 21	+1,3	+0,3	-2,5	+2,1	+1,3	+0,5	+3,0	50		4. 21	-0,2	-1,4	-3,6	+0,7	+1,5	-0,3	-3,3	
2. 21	+1,3	+0,6	-2,1	+1,5	+1,1	+0,8	+3,2			10. 22	+0,4	+0,1	-2,5	+1,8	+0,9	-0,3	+0,4	59
10. 2	+1,0	+0,4	-2,4	+2,2	+1,2	+1,5	+3,9	51		10. 22	+0,4	-0,7	-3,2	+1,6	+1,8	-0,1	-0,2	
10. 2	+1,8	+0,4	-2,7	+2,4	+1,4	+0,4	+3,7			18. 1	-0,5	-3,0	-7,7	+0,9	+1,1	-0,8	-5,0	66
20. 5	+1,1	0,0	-1,6	+2,1	+1,8	+1,0	+4,4	43		18. 1	+1,0	-2,4	-5,4	+3,5	+0,4	-2,2	-2,6	
24. 8	+1,4	-0,1	-1,7	+1,9	+1,5	+1,2	+4,2			24. 1	+0,4	0,0	-6,1	+3,0	+1,0	-1,4	-1,6	58
May 3. 2	+0,9	-0,8	-3,1	+3,1	+0,1	+0,1	+0,3	51		24. 1	-0,5	-0,5	-5,1	+2,8	+0,5	-3,6	-3,2	
3. 2	+1,5	-0,9	-2,8	+1,0	+0,8	0,0	-0,4			Oct. 3. 2	+0,7	-2,2	-5,9	+1,7	+0,9	-2,3	-3,6	60
4. 1	+1,7	-0,4	-2,3	+3,8	0,0	+2,1	+4,9	51		3. 2	0,0	-2,3	-5,9	+1,9	+1,5	-1,9	-3,3	
4. 1	+0,2	+1,2	-2,3	+1,6	+1,1	-0,1	+1,7			25. 9	+1,3	+0,9	-4,9	+3,1	+2,9	-1,6	+0,8	46
8. 1	+0,7	0,0	-1,9	+2,7	+1,5	+1,1	+4,1	52		25. 9	+1,3	-0,3	-4,5	+3,0	+3,2	-0,8	+1,0	
8. 1	+2,4	-1,8	-1,6	+0,5	+2,1	-1,1	+0,5			Nov. 17. 4	+1,0	-1,6	-4,8	+2,3	+2,8	-0,8	-0,6	45
15. 2	+1,4	-0,5	-2,0	+3,2	+1,1	-0,4	+2,8	56		29. 7	+2,1	-0,9	-4,5	+4,0	+4,1	-0,5	+2,2	
15. 2	+0,7	-1,1	-2,9	+2,7	-0,1	-0,3	-1,0			Dec. 16. 10	+0,7	+0,7	-1,7	+3,0	+1,7	-0,7	+3,7	43
23. 0	+1,3	-0,1	-1,3	+0,7	+0,9	+0,4	+1,9	55		16. 10	+1,6	+1,0	-1,7	+2,3	+2,1	+0,2	+5,5	
23. 0	+0,3	-0,8	-3,6	+0,6	+1,1	+0,1	-2,3			23. 7	+1,8	+0,1	-4,8	+2,3	+3,6	-1,3	+0,9	
29. 0	+1,3	+0,6	-2,0	+3,2	+1,4	+0,9	+5,4	54		31. 22	+3,0	-0,4	-3,9	+3,4	+3,8	-1,3	+2,3	46
29. 0	+2,1	+1,6	-3,0	+2,1	-0,6	+0,5	+2,7			31. 22	+1,7	+1,3	-4,3	+3,9	+4,6	-0,1	+3,6	
June 12. 1	+0,9	+0,9	-3,4	+3,8	+1,9	-0,2	+3,9	57										

Before the Runs were taken on Feb. 13, the distances of the microscopes B and F, and of their object-glasses, from the Circle, were adjusted to diminish their Runs. The Runs taken by C from May 3 to June 26 are somewhat irregular, and not well accordant with those of B commencing on July 3, owing probably to inexperience in the use of the microscopes.—The readings of two microscopes being omitted in the observation of  $\alpha$  Ursæ Majoris R on May 4, and that of  $\delta$  Ursæ Majoris R May 16, the corrections for Runs for 5' are inferred from the Runs of the other four microscopes.—On Aug. 8 the distance of microscope F from the circle was again adjusted, this microscope having been displaced by an operation performed that day for making it point to the middle of the gold band on which the graduation of the circle is engraved.—The Runs of Aug. 19 are only used for calculating the value of the micrometer revolution.—The Runs taken on Sept. 18, and all following to the end of the year, were obtained by measuring from division to division over 10', with the exception of those of Dec. 16, which



were taken as usual over 5'. In the first set of Sept. 18 the wires were moved from 2',5 above to 7',5 below the zero; but as it was found that the wires of microscope A moved unsteadily at large distances below the zero, in the second set of that day they were moved from 5' above to 5' below zero. Subsequently the measures were taken from 3' above to 7' below zero, the movement of the wires of microscope A being found steady through this interval. On Dec. 18 an attempt was made to increase the range of that microscope below the zero, but without effect. The method of obtaining the Runs by measures of 10' was eventually discontinued, and the measures over 5' resumed, it being found that the uniformity of the micrometer screws could not be depended upon through the larger interval.

The reference micrometer reading is 9',000, as in the latter part of 1853.

Aug. 18, 1<sup>h</sup>, the value of the micrometer revolution was determined by the following method. The Telescope being turned a little from the nadir point, the image of the micrometer-wire was made to coincide with the fixed wire; the circle was then read off, and the micrometer reading taken six times. The same operations were performed after turning the Telescope from the nadir point a little in the opposite direction. The difference of the micrometer readings is equivalent to *double* the difference of the circle readings. As I was disturbed in taking these measures by the entrance of visitors, I made two other determinations on Aug. 19, 3<sup>h</sup>—4½<sup>h</sup>, in the second of which the arc moved over by the Telescope was less than in the former instances, and, during the last micrometer readings, the image of the wire was obscured by the reflection of light from the brass bar. The temperature of the room was about 58° on Aug. 18 and 62° on Aug. 19. The measures and their results are as follows.

Date.	Mean micrometer reading.	Microscope A	B	C	D	E	F	Correction for Runs.	Concluded Circle reading.	Difference of Circle reading.	Difference of microm. reading.	Value of one revolution.
Aug. 18. 1	118,901	4. 14,5	13,4	13,6	13,6	13,2	16,3	+ 0,6	44. 49. 14,20	6. 21,87	36,660	20,833
1	82,241	2. 53,0	51,9	52,9	52,6	52,0	53,8	- 2,2	44. 42. 52,33			
Aug. 19. 3	123,925	0. 6,6	9,1	4,9	7,3	7,4	8,7	- 0,1	44. 50. 7,31	6. 6,66	35,088	20,899
3½	88,837	3. 59,0	61,2	58,0	61,0	62,6	61,3	+ 0,8	44. 44. 0,65	5. 0,33	28,813	20,846
4½	117,650	3. 59,7	61,4	58,9	61,3	62,2	61,7	+ 0,8	44. 49. 0,98			

The corrections for Runs, which were negative in the first set of Aug. 18 and the last two of Aug. 19, were calculated from the correction -3'',8 for 5' obtained on Aug. 19. The mean of the three values above is 20'',859. As adjustments of the distance of the wire-frame from the object-glass were made on February 13 and on August 11, by which the value of the micrometer revolution was probably altered in some degree, and as the above determination was not altogether satisfactory, it was thought right to combine it with those of the two preceding years. The mean of the three is 20'',856, which is used throughout 1854.

The equatorial adjustment of the micrometer-wire was sufficiently exact throughout the year excepting between Aug. 11 and Aug. 26, a displacement having been produced by the above-mentioned adjustment of the position of the wire-frame on Aug. 11. To correct this error I observed as follows. Aug. 25, 13<sup>h</sup>—14<sup>h</sup>, small stars near the equator were bisected soon after entering the field and before departure, and the micrometer reading was set down after each bisection. Twelve measures of the displacement were obtained in this manner, which gave as a mean result the difference 0'',0745 of micrometer readings corresponding to five wire-intervals, or in arc, 0'',310 corresponding to one interval. As the micrometer reading was greater near entrance than near departure, the *West* half of the wire was too high in the field, and consequently the position of a star, as inferred from a bisection with the micrometer-wire, would be too low in the field, or its N.P.D. would be too small, before passing the middle wire, and too high in the field, or its N.P.D. too great, after passing the middle wire. Hence the required correction is -0'',310 × the interval in column 11. These corrections have been applied from Aug. 11 after moving the wire-frame, to Aug. 26 inclusive, the micrometer-wire having been adjusted equatorially after taking the zenith point on that day. After obtaining by measurement the distance of the adjusting screw from

the centre of the field and the value of its thread-interval, it was found by calculation that the number of turns of the screw for correcting any displacement, was one-tenth of the number of seconds of error corresponding to five intervals. The correction on Aug. 26 was performed by this rule, but on Aug. 29, 10<sup>h</sup>—11<sup>h</sup><sub>2</sub>, a final correction was made by equatorial stars. The position of the wire between Nov. 18 and Nov. 25 was not ascertained, but all the observations in that interval were taken at the middle wire.

*Coincidences of the micrometer-wire and bar with the fixed wire in 1854.*

\* \* \* See page liv.

Date.	Reading for coincidence of wire.	Reading for coincidence of bar.	Reduction to wire-reading.	Interval from middle wire.	Date.	Reading for coincidence of wire.	Reading for coincidence of bar.	Reduction to wire-reading.	Interval from middle wire.
Jan. 2. 8 ...	10,037 ...	9,991 ...	+0,046 ...	0	Aug. 15. 11 ...	10,057 ...	10,012 ...	+0,045 ...	+2
Feb. 2. 12 ...	10,042 ...	9,980 ...	+0,062 ...	+1	15. 11 ...	10,035			0
3. 12 ...	10,047 ...	9,988 ...	+0,059 ...	+2	17. 11 ...	10,031 ...	10,000 ...	+0,031 ...	+2
7. 12 ...	10,043 ...	9,991 ...	+0,052 ...	+2	Sept. 2. 10 ...	10,046 ...	10,015 ...	+0,031 ...	0
9. 12 ...	10,041 ...	9,998 ...	+0,043 ...	+1	4. 20 ...	10,042 ...	10,004 ...	+0,038 ...	+ $\frac{1}{2}$
25. 11 ...	10,042 ...	9,990 ...	+0,052 ...	+1	5. 9 ...	10,051 ...	10,023 ...	+0,028 ...	+ $\frac{1}{2}$
28. 10 ...	10,048 ...	9,994 ...	+0,054 ...	+1	5. 12 ...	10,063 ...	10,022 ...	+0,041 ...	+2
Mar. 2. 10 ...	10,052 ...	9,994 ...	+0,058 ...	+2	9. 9 ...	10,045 ...	10,020 ...	+0,025 ...	0
4. 9 ...	10,040 ...	9,999 ...	+0,041 ...	+1	9. 12 ...	10,071 ...	10,017 ...	+0,054 ...	2
13. 8 ...	10,043 ...	9,982 ...	+0,061 ...	+2	11. 9 ...	10,051 ...	10,014 ...	+0,037 ...	+ $\frac{1}{2}$
16. 14 ...	10,040 ...	9,993 ...	+0,047 ...	+1	11. 10 ...	10,065 ...	10,015 ...	+0,050 ...	+2
23. 10 ...	10,028 ...	9,977 ...	+0,051 ...	0	12. 9 ...	10,063 ...	10,007 ...	+0,056 ...	+2
24. 12 ...	10,039 ...	9,999 ...	+0,040 ...	0	21. 1 ...	10,009 ...	9,986 ...	+0,023 ...	0
28. 13 ...	10,027 ...	9,997 ...	+0,030 ...	0	21. 10 ...	10,027 ...	9,972 ...	+0,055 ...	+2
Apr. 15. 10 ...	10,029 ...	10,007 ...	+0,022 ...	0	21. 10 ...	10,018 ...	9,970 ...	+0,048 ...	+ $\frac{1}{2}$
19. 11 ...	10,032 ...	10,007 ...	+0,025 ...	0	25. 8 ...	10,039 ...	9,996 ...	+0,043 ...	+2
May 3. 2 ...	10,038 ...	10,006 ...	+0,032 ...	0	29. 10 ...	10,011 ...	9,976 ...	+0,035 ...	0
4. 9 ...	10,041 ...	10,013 ...	+0,028 ...	0	Oct. 23. 11 ...	10,057 ...	10,004 ...	+0,053 ...	+2 $\frac{3}{4}$
25. 12 ...	10,028 ...	10,026 ...	+0,002 ...	0	Dec. 16. 9 ...	10,021 ...	10,001 ...	+0,020 ...	0
June 20. 1 ...	10,028 ...	10,017 ...	+0,011 ...	0					

The reductions to wire-readings inserted in the notes are either the above values or are obtained from them by interpolation. In several instances Mr Criswick took the coincidences at a part of the field different from that at which the bisection of the object was made. This was the case on May 4, June 20, Sept. 2, 4, 5, and 11. The bar-edge is so nearly parallel to the micrometer-wire, that very small error is induced by this circumstance. The coincidences taken on June 20 were used on June 19, and the first set of Sept. 21 were used for the last observation of Sept. 20. The second wire-coincidence of Aug. 15 is used for a star accidentally bisected with the fixed wire. Some of the above coincidences were not required for use, the observations for which they were intended being rejected when the objects were found not to be Planets.

The sidereal times of bisection of Polaris and  $\delta$  Ursæ Minoris were inferred from the noted times by Molyneux, by means of comparisons of Molyneux with Hardy contained in the subjoined list.



Date.	Time by M. h. m. s.	Time by II. h. m. s.	Date.	Time by M. h. m. s.	Time by H. h. m. s.
Mar. 17 .....	1.20.40	1.21.8,0	May 31 .....	12.59.20,0	13.1.20,0
29 .....	1.11.8,0	1.10.22,0	June 19 .....	6.55.39,0	6.54.0,0
Apr. 17 .....	1.12.28,0	1.12.18,0	23 .....	12.54.35,0	12.53.0,0
May 2 .....	1.32.40,0	1.33.0,0	29 .....	13.15.21,5	13.14.0,0
3 .....	14.58.39,5	14.59.0,0	Aug. 17 .....	20.25.40,0	20.25.52,0
4 .....	10.30.37,0	10.31.0,0	31 .....	21.5.53,0	21.5.31,0
4 .....	1.16.37,5	1.17.0,0	Sept. 2 .....	23.21.10,0	23.20.52,8
5 .....	13.20.37,6	13.21.0,0	4 .....	7.55.0,0	7.54.48,0
11 .....	1.14.29,0	1.15.0,0	5 .....	9.0.0,0	8.59.49,0
14 .....	1.0.25,0	1.1.0,0	6 .....	22.39.0,0	22.38.52,0
15 .....	13.23.24,0	13.24.0,0	9 .....	22.30.1,0	22.30.0,0
16 .....	1.12.22,0	1.13.0,0	11 .....	13.21.56,5	13.22.0,0
19 .....	0.41.17,0	0.42.0,0	11 .....	18.18.56,0	18.19.0,0
21 .....	1.11.13,6	1.12.0,0	12 .....	19.7.54,0	19.8.0,0
23 .....	14.23.11,0	14.24.0,0	16 .....	13.9.25,0	13.9.41,0
24 .....	1.7.9,0	1.8.0,0	25 .....	1.8.20,00	1.6.54,57
27 .....	13.12.15,0	13.13.9,5	26 .....	13.19.55,0	13.18.30,0
30 .....	12.59.1,0	13.1.0,0			

Some of the above comparisons were made use of for the purpose of obtaining approximately the R.A. of zodiacal stars, of which, for the sake of identification, Circle transits were frequently taken together with the observations of N.P.D.

On Sept. 1 observations of  $\delta$  Ursæ Minoris and 51 (Hev.) Cephei were made by Mr Criswick without noting the times of bisection, the interval of the place of bisection from the middle wire being alone indicated. To reduce these observations it was necessary to obtain with some accuracy the intervals from the middle wire to the meridian, and consequently to calculate the collimation, level, and azimuth errors; which was done approximately as follows. On Sept. 25 a transit of Polaris was taken by reflection at wires II and III, the noted times by Molyneux being  $0^h.54^m.35^s,0$  and  $1^h.5^m.19^s,0$ ; and a direct transit was taken at wires IV and V at the times  $1^h.15^m.59^s,0$  and  $1^h.26^m.41^s,0$ . These times being reduced to transit across the mean of the wires by the Table of intervals in p. xxv. of Vol. xviii. the result is  $1^h.5^m.19^s,83$  ( $t_1$ ) for the reflection observation and  $1^h.5^m.15^s,05$  ( $t_2$ ) for the direct observation. Hence by the formula

$$\text{Correction of level error} = \frac{15}{2} (t_1 - t_2) \sin \delta \operatorname{cosec} (l + \delta),$$

in which  $\delta = 1^{\circ}.28'.2''$ , the N.P.D. of Polaris, and  $l = 37^{\circ}.47'.8''$ , the co-latitude of the Observatory, it will be found that the correction of level error =  $+1''.1$ . To determine the collimation error of the middle wire, on Sept. 27 I placed the micrometer-wire in such a position that its distance from its image, as seen with the collimating eye-piece, was equal, according to the judgment of the eye, to the distance of the middle wire from its image, and I then placed the micrometer-wire and its image in coincidence. The micrometer readings for the two positions were  $11''.200$  and  $12''.326$ , and their difference converted into arc is equal to  $23''.5$ . It was noted that the middle wire was to the *West* of its image. As the level error is positive, the west end of the axis was too high, and the wire would on this account be to the *East* of the image. Hence the collimation error of the middle wire =  $23''.5 + 1''.1 = +24''.6$ , and by the Table above cited that of the mean of the wires =  $+24''.6 - 1''.3 = +23''.3$ . By a Circle transit of  $\alpha$  Arietis at the five wires on Sept. 25, the time by Molyneux of transit across the mean of the wires was  $1^h.59^m.9^s,68$ . Combining this with the time for Polaris, viz.  $1^h.5^m.15^s,05$ , correcting for collimation and level errors, and disregarding the small change of clock error in the interval between the transits, it will be found by the usual calculation that the azimuth error =  $-28''.8$ .

The collimation error of the middle wire, level error, and azimuth error being respectively  $+24''.6$ ,  $+1''.1$  and  $-28''.8$ , the intervals from the middle wire to the meridian are  $+44^s,92$  and  $47^s,03$  for the reflection and direct observations of  $\delta$  Ursæ Minoris on Sept. 1, and  $-53^s,28$  and  $-55^s,69$  for those of 51 (Hev.) Cephei SP. The intervals of the noted places of bisection from the middle wire are by calculation from the Table of intervals  $4^m.35^s,93$ ,  $3^m.26^s,95$ ,  $7^m.10^s,71$  and  $8^m.36^s,32$ . Hence as the apparent R.A. of the stars were respectively  $18^h.19^m.27^s,99$  and  $6^h.30^m.36^s,39$ , the approximate sidereal times of bisection were  $18^h.14^m.7^s$ ,  $18^h.15^m.14^s$ ,  $18^h.36^m.54^s$ , and  $18^h.38^m.17^s$ . The first and third of the times given in the notes (p. 313) are slightly erroneous in consequence of applying a wrong sign to the coefficient of level error for the reflection observations.



The formula used for calculating the corrections for curvature of path in all the observations of 51 (Hev.) Cephei was

$$\text{Correction} = [4,29600] \sin^2 \frac{15t}{2} - [0,29903] \sin^2 \frac{15t}{2} \times n,$$

$t$  being the interval of the bisection from meridian passage, and  $87^\circ.15' + n''$  being the declination of the star.

On March 3, the error of Molyneux and the sidereal times of the bisections of  $\delta$  Ursæ Minoris SP. were inferred from a Circle transit of  $\mu$  Canis Majoris. This observation was accompanied with no comparison of clocks; but on March 17 the star N<sup>o</sup>. 199 in p. 334 was observed to pass the middle wire at  $7^h.13^m.54^s.0$  by M. By the comparison of M and H on that day, allowing  $3^s$  for losing rate of M, the sidereal time of transit was approximately  $7^h.16^m.38^s.8$ ; and the apparent R.A. of the star deduced from the mean R.A. in p. 334 was  $7^h.16^m.38^s.9$ . Since the N.P.D. of this star is  $103^\circ.4'$ , which is only  $47'$  less than that of  $\mu$  Canis Majoris, it may be inferred that the error of Molyneux on March 3 was obtained with sufficient approximation by the transit of the latter star.

The position of the Circle during the year 1854 may be approximately inferred from the following considerations. From the beginning of the year to Feb. 13, on which day it was removed from the wall, the position may be presumed to be nearly the same as at the close of 1853. (See p. lvii.) The inference just drawn from a Circle transit on March 17 shews that after the Circle was replaced, there was no considerable alteration of position. On Aug. 17 I noted that the star H. C. 40547 passed the middle wire at  $20^h.50^m.50^s$  by M, and by a rough comparison of M with H near the time of passage, M was  $12^s$  slower than H, and consequently  $29^s.5$  slow; so that the apparent R.A. of the star by the Circle transit was  $20^h.51^m.19^s.5$ . But by an observation with the Transit on the same day the R.A. was  $20^h.51^m.17^s.7$ . Its N.P.D. is  $107^\circ.27'$ . Hence it appears that the Circle was very little displaced by being removed from the wall on Aug. 8. The values of collimation, level, and azimuth errors of the middle wire, obtained, as above stated, on Sept. 25—27, give for the reduction to the meridian at N.P.D.  $60^\circ$ ,  $+1^s.2$ , and at N.P.D.  $120^\circ$ ,  $0^s.0$ . By the comparison of M with H on Sept. 25, which was made with exactness by means of the solar chronometer W, M was fast at the Circle transit of  $\alpha$  Arietis on Sept. 25 by  $11^s.49$ . Hence the sidereal time of transit was  $1^h.58^m.58^s.19$ ; and the R.A. of  $\alpha$  Arietis being  $1^h.58^m.59^s.62$ , the reduction to the meridian was  $+1^s.43$ .

On Sept. 27, 8<sup>h</sup>, the screw for the azimuth adjustment was turned through  $68^\circ$  nearly to correct the azimuth error, after ascertaining by measurement that the distance of the screw from the East pivot is  $44^{\text{in}}$ , and that 13 of its thread-intervals are equal to  $0^{\text{in}}.438$ . On Sept. 28, 3<sup>h</sup>, I corrected the collimation error approximately, by making the middle wire and its reflected image coincide, the effect of the small level error being neglected. The opposite screws for the adjustment were found not to be tight, but I think there had been no unsteadiness of the wires. The Telescope-tube having been replaced on Nov. 18, after being sent to Mr Simms to be perforated for the purpose of collimating through it with moveable collimators, on Nov. 25 I again placed the middle wire in coincidence with its image. As there was no apparent cause for any considerable change of level and azimuth errors, it may be presumed that the adjustment of the middle wire to the meridian was sufficiently good during the remainder of the year.

From the above discussion it may be concluded that none of the observations of N.P.D. in 1854 are sensibly affected by error of position of the Circle.



*Zenith Points obtained in 1854 with the Collimating Eye-piece.*

Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.	Time of Observation.	Seconds of Zenith Point.
Jan. 3. <sup>A</sup>	50,02	Mar. 28. <sup>A</sup> 22	47,46	June 12. <sup>A</sup> 1	49,15	Sept. 10. <sup>A</sup> 22	61,05
13. 2	49,34	28. 22	47,27	19. 0	47,95	18. 1	59,73
13. 2	49,78	Apr. 2. 21	47,50	26. 0	48,58	24. 1	59,56
24. 22	49,92	10. 2	48,74	July 2. 22	48,57	Oct. 3. 2	60,83
31. 1	49,75	20. 5	49,26	11. 2	49,31	25. 3	59,46
Feb. 7. 1	50,07	24. 8	49,59	20. 2	48,73	Nov. 17. 4	56,07
13. 10 <sup>1</sup> / <sub>2</sub>	47,31	May 3. 2	48,28	28. 22	(50,09)	29. 7	55,87
14. 2	46,02	4. 1	48,56	Aug. 1. 21	49,50	Dec. 16. 10	55,82
27. 2	46,52	8. 0	48,80	11. 7	63,30	23. 7	55,46
Mar. 6. 2	47,24	15. 1	47,84	11. 8	57,18	31. 22	55,86
20. 1	47,81	22. 0	48,70	26. 3	57,62		
20. 1	47,25	29. 0	49,08	Sept. 4. 21	60,49		

Feb. 13, 4<sup>h</sup>, the Telescope was shifted on the circle through about 45°, and before taking the zenith point the Runs of Microscopes B and F were altered, the microscope readings were adjusted, and the position of the eye-piece was adjusted, in order to see the wires and their images with equal distinctness at the same time. The zenith point was taken a second time on March 20, on account of the Telescope having been accidentally struck near the eye-piece. That of July 28 is not used, the images and their wires being so unsteady and ill-defined that the operation was discontinued and the Runs omitted.

On Aug. 8, 1<sup>h</sup>, after the Circle had been taken from the wall and replaced, I adjusted the pointings of the microscopes to the *middle* of the graduation on the gold band. Having observed by means of the microscopes, that the parts of the gold band contiguous to the ends of the Telescope are *farthest* from the wall, and those 90° from these positions *nearest* to the wall, the above adjustments were made when the microscopes pointed to the intermediate positions. (This form of the gold band I find to be constantly related to the position of the Telescope on the Circle, and must therefore be due to the circumstance that the Circle is put into a state of constraint when the Telescope is attached to it.) After this operation the microscope readings were adjusted.

After taking the first zenith point on Aug. 11, the eye-piece was shifted relatively to the object-glass. The screws had to be turned considerably before the wires and their images could be seen with equal distinctness. The wire-frame *approached* the object-glass, the effect of the summer temperature being to make the distance between them too great. This adjustment altered the zenith point. It seems probable that the zenith point was again altered by the equatorial adjustment of the micrometer-wire on Aug. 26.

The zenith point of Oct. 25 was taken after workmen had been occupied in the Circle Room with the apparatus for mounting the moveable collimators, and that of Nov. 17 after replacing the Telescope, the position of which on the Circle was at the same time shifted through about 67°. The disturbance of microscope A on Dec. 18, mentioned in page 321, does not appear to have altered the zenith point.

Various methods of obtaining the reading for coincidence of the micrometer-wire with its image were adopted, as in 1853 (see p. lv.) Generally T employed the method of equidistant intervals between the fixed and micrometer-wires and their images, which requires the reading for coincidence of the micrometer-wire with the fixed wire, and B and C employed the method of alternate contacts of the micrometer-wire and its image on opposite sides.

The earlier observations of Mr Criswick, commencing May 2, and the observations of Mr Henry Todd on Aug. 24 and from Sept. 28 to Oct. 23, being made for trial, were restricted to bright objects.

III. *Mean Right Ascensions and Mean North Polar Distances of Stars, as deduced from the separate observations, and concluded Mean Right Ascensions and Mean North Polar Distances of the Stars observed in 1854, with the Annual Variations.* Pages 330—358.

These Catalogues differ in no respect from those of the two preceding years, excepting that a reference number is affixed to only one of the observations of the same star, and in consequence the last number of each Catalogue indicates the number of stars it contains.

The Corrections and Annual Variations were calculated by the same formulæ as those of 1853. The star 51 (Hev.) Cephei is placed among the Fundamental Stars because it is sometimes used for the determination of azimuth error, although this was not the case in 1854. The R.A. corrections for this star were deduced from the Nautical Almanac by interpolating the apparent R.A. to second differences, and taking account of the small corrections in pages 478 and 479. For the N.P.D. corrections, simple interpolation was employed. In estimating the weight due to the concluded R.A. and N.P.D. of the Catalogues, it should be taken into account that some of the observations were taken by inexperienced observers. The magnitudes recorded by Mr Breen and Mr Criswick seem to have been in many instances estimated when the state of the sky did not allow of judging of the real magnitudes of the stars, and the numbers adopted by the latter observer appear to be generally higher than those in common use.

*Mean excess for each Star of the adopted Zenith Points above the Zenith Points given by direct and reflection observations in 1854.*

\* \* See page xxv.

Star.	Zen. Dist. South.	No. of Obs.	Mean value of M - Z.	Star.	Zen. Dist. South.	No. of Obs.	Mean value of M - Z.
δ Ursæ Minoris SP. 51 (Hev.) Cephei sp.	- 41. 11 40. 32	4 6	+ 0,80 - 0,41	Castor <i>nf.</i> .....	+ 20. 1	2	+ 1,17
Polaris.....	36. 19	14	- 0,52	Castor <i>sp.</i> .....	20. 1	1	+ 2,16
δ Ursæ Minoris....	34. 23	8	- 0,07	ζ Herculis.....	20. 21	1	+ 2,09
5 Ursæ Minoris....	24. 8	1	- 0,38	ζ Cygni.....	22. 35	1	+ 3,03
β Ursæ Minoris....	22. 32	3	- 1,21	γ Comæ.....	23. 8	1	+ 3,58
κ Draconis.....	18. 23	2	- 1,42	β Tauri.....	23. 44	1	+ 0,39
ο Cephei.....	15. 6	1	+ 0,28	Pollux.....	23. 51	3	+ 0,84
ζ Draconis.....	13. 41	1	- 0,24	ε Bootis.....	24. 31	2	- 0,08
ι Draconis.....	13. 14	2	+ 0,27	α Coronæ.....	25. 0	1	+ 2,03
π Draconis.....	13. 13	4	- 1,03	ε Leonis.....	27. 46	1	+ 1,74
α Draconis.....	12. 51	1	- 0,73	γ Cancrī.....	30. 14	1	+ 0,14
α Ursæ Majoris....	10. 19	1	- 0,63	Arcturus.....	32. 16	8	+ 0,75
η Draconis.....	9. 38	1	+ 0,86	η Bootis.....	33. 5	1	+ 1,06
ι Draconis.....	7. 16	1	- 0,73	υ Bootis.....	35. 42	2	+ 1,17
θ Draconis.....	6. 44	2	- 0,53	51 Geminorum....	35. 49	1	- 0,31
δ Ursæ Majoris....	5. 38	4	- 0,21	θ Leonis.....	35. 59	2	+ 0,51
78 Ursæ Majoris...	4. 56	2	+ 0,18	Aldebaran.....	36. 0	2	+ 0,51
ζ Ursæ Majoris....	3. 28	1	+ 0,19	γ Serpentis.....	36. 4	2	+ 0,32
4 Persei.....	- 1. 34	1	+ 2,16	β Leonis.....	36. 50	2	+ 0,99
A Persei.....	+ 1. 57	1	+ 0,05	ε Aquilæ.....	37. 21	2	+ 0,59
η Ursæ Majoris....	2. 10	1	+ 2,20	α Herculis.....	37. 39	2	+ 1,05
λ Persei.....	2. 16	1	+ 1,20	ζ Aquilæ.....	38. 34	5	+ 1,18
29 Persei.....	2. 32	1	+ 0,14	ξ Geminorum....	39. 10	1	+ 0,86
B.A.C. 1035.....	3. 32	1	- 0,01	Regulus.....	39. 32	2	+ 1,17
ι Ursæ Majoris....	3. 36	1	+ 0,19	ε Virginis.....	40. 28	1	- 2,14
B.A.C. 1089.....	4. 46	1	- 0,01	ι Ophiuchi.....	41. 48	1	+ 1,36
τ Herculis.....	5. 33	1	+ 0,79	γ Aquilæ.....	41. 57	3	+ 0,14
β Canum Venat....	10. 4	2	+ 1,80	ρ Leonis.....	42. 10	1	+ 1,14
γ Bootis.....	13. 16	5	+ 0,44	α Aquilæ.....	43. 44	2	+ 1,21
β Lyræ.....	19. 1	2	+ 2,30	β Aquilæ.....	46. 10	2	+ 0,22
γ Lyræ.....	+ 19. 43	1	+ 0,49	β <sup>1</sup> Scorpii.....	71. 37	1	+ 1,74
				B.A.C. 5330.....	+ 71. 37	1	+ 2,27



*Corrections for Discordance of Zenith Points and Error of the assumed Co-latitude, applied to N.P.D. obtained by direct and reflection observations in 1854.*

N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.	N.P.D.	Correction to direct observation.	Correction to reflection observation.
-5	+0,64	-0,10	+40	+1,00	+0,26	+85	+0,69	-0,05
0	+0,18	-0,56	45	+1,37	+0,63	90	+0,73	-0,01
+5	-0,13	-0,87	50	+1,60	+0,86	95	+0,94	+0,20
10	-0,30	-1,04	55	+1,71	+0,97	100	+1,30	+0,56
15	-0,37	-1,11	60	+1,74	+1,00	105	+1,53	+0,79
20	-0,33	-1,07	65	+1,67	+0,93	110	+1,66	+0,92
25	-0,18	-0,92	70	+1,43	+0,69	115	+1,73	+0,99
30	+0,08	-0,66	75	+1,06	+0,32	120	+1,77	+1,03
+35	+0,49	-0,25	+80	+0,78	+0,04	+125	+1,80	+1,06

The empirical curve from which these corrections were deduced was traced for N.P.D. greater than  $81^{\circ}$  according to its form in previous years, the number of reflection observations of low stars in 1854 not being sufficient to determine this part of the course. The correction of the assumed colatitude being  $+0'',37$ , according to the above Table the zenith direction is more *southward* by  $0'',35$  as determined by the collimating eye-piece, than as inferred from the direct and reflection observations of zenith stars. (See p. lvii.)

IV. *Measures of the Sun's diameter, and concluded Right Ascensions and North Polar Distances of the Sun, and Planets; compared with Tabular values. Pages 360—369.*

All the explanations required for this Section may be gathered from notices given under the corresponding Sections of 1852 and 1853. The Tabular diameter of the Sun is the same as that adopted for comparison with the measures of 1853. With respect to the Planets, it is only necessary to state, in addition to the information contained in the notes, the sources from which the Tabular quantities were derived.

In all cases in which Ephemerides of the Planets could not be procured, or were not sufficiently accurate, the observed places were compared with places calculated from Elements for the respective times of observation. Log-distance for the calculation of the corrections for parallax and aberration was thus obtained; and generally also the horary variations of R.A. and N.P.D. required in the calculation of the aberration-correction, could be deduced from the calculated places with sufficient accuracy by interpolation. When this was not the case, recourse was had either to approximate Ephemerides, or to observed places. It is to be understood that the aberration-corrections were obtained from the calculated places excepting in the instances mentioned below, and that in all cases of comparison with exact Ephemerides aberration-corrections have been applied.

*Melpomene.* The Tabular quantities were calculated from the Elements in the *Astronomische Nachrichten*, Vol. xxxix. col. 71. Aberration-corrections were obtained from the Ephemeris in col. 72 as far as it extended: the rest were deduced from the calculated places, with the aid of the Greenwich observed places of Feb. 23 and 25. .

*Euterpe.* The comparison is a continuation of that of 1853.

*Urania.* The Tabular quantities were interpolated from the Ephemeris in the *Astronomische Nachrichten*, Vol. xl. col. 268.

*Iris.* The comparison is made with the Ephemeris in the *Astronomical Journal*, Vol. iii. p. 31.

*Massilia.* The Elements in the *Astronomische Nachrichten*, Vol. xxxix. col. 165, reckoned from the Mean *Æquinox* of the Epoch, were adopted. The aberration-corrections for March 6 were obtained by means of the Greenwich observations on March 2 and 11.



*Hebe.* The places to May 5 are compared with the Ephemeris in the *Berliner Jahrbuch* for 1856, p. 373. Places were then computed from the Elements in p. 410 for May 5, 8, and 9, and as the computed R.A. and N.P.D. of May 5 differed by small quantities from those of the Ephemeris, the differences were applied to the places computed for May 8 and 9.

*Lutetia.* The Tabular quantities were computed from the Elements in the *Berliner Jahrbuch* for 1856, p. 411. The aberration-corrections were obtained from the Ephemeris in the *Astronomische Nachrichten*, Vol. xxxvii. col. 400.

*Fortuna.* The Tabular places and log-distance were calculated from the Elements in the *Berliner Jahrbuch* for 1856, p. 411. The aberration-corrections to Feb. 25 were derived from the Ephemeris in p. 391, that on March 17 from the ten-day Ephemeris, p. 390, and the rest from the calculated places.

*Amphitrite.* The Elements in the *Comptes Rendus*, t. XL. N<sup>o</sup>. 5, which were also published by Mr Hind, have been used for computing the Tabular quantities. The corrections for aberration on March 16 and 23 were obtained by the aid of places observed at Greenwich and Cambridge: the rest were deduced from the calculated places.

*Egeria.* The comparison is made with the Ephemeris in the *Astronomische Nachrichten*, Vol. xxx. col. 111.

*Irene.* The comparison is a continuation of that of 1853.

*Thalia.* The Ephemeris in the *Berliner Jahrbuch* for 1856, p. 401, which was used for comparison, was extended by differences to May 31, and the Tabular quantities for this day may therefore not be quite accurate. Observations of this Planet were delayed by the observers being misled as to the error of the Ephemeris by an error in the place of a comparison star.

*Eunomia.* The Tabular quantities are from the Ephemeris in the *Astronomical Journal*, Vol. iii. p. 88. As the Ephemeris extends only to April 17, places were computed for April 15, 18, and 24, from the Elements accompanying the Ephemeris, and the differences between the two former and corresponding places inferred from the Ephemeris, were taken into account in correcting the computed place of April 24. The effect of the perturbation of Jupiter is thus allowed for, but probably with not much accuracy.

*Proserpine.* The Tabular quantities were computed from the Elements in the *Astronomische Nachrichten*, Vol. XLII. col. 124.

*Bellona.* The comparison is made with the Ephemeris in the *Astronomische Nachrichten*, Vol. XL. col. 204.

*Calliope.* The Elements in the *Astronomische Nachrichten*, Vol. XL. col. 234 have been used.

*Hygeia.* Zech's Elements in the *Berliner Jahrbuch* for 1856, p. 410, as corrected in that for 1857, p. 437, have been used.

*Neptune.* The comparison is made with the Ephemeris in the Supplement to the American Nautical Almanac of 1856.

The results of the Calculation of the *Position of the Ecliptic* and of the *Mean Error of the assumed R.A. of the Fundamental Stars* (pp. 370 and 371), differ little from those obtained for 1853, although there was an interruption of the Circle observations of 1854.

The *Occultations* were calculated as in the two preceding years. The calculations for the occultation of Mars were made for the *mean* of the times of first and last contacts, both at disappearance and reappearance, because the mode of calculation allows of readily deducing the final equations for the contacts of Limbs, from those for the disappearance and reappearance of centre.

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All the observations in this Volume were originally recorded in pencil writing in small memorandum books, which are carefully preserved for future reference.



## ADDENDA.

WHILE this Volume was going through the press, it was found that some explanations had been omitted both in this and the preceding Volume, and that the names and places of several of the stars required corrections or verifications. These deficiencies it is proposed to supply here.

### VOLUME XVIII.

- p. 104, Nos. 428 and 429. H. C. 31954 and H. C. 31955 are the same star. The N.P.D. of the latter is 5' too great in H. C.  
p. 111, Nos. 892 and 903. Each of the R.A. is 1<sup>s</sup> defective, apparently from error in counting.  
p. 136, No. 3. H. C. 18020 should have been called B.A.C. 3115.  
p. 142, No. 426. The observed place of the star agrees well enough with that of H. C. 29779 if the N.P.D. of H. C. 29778 and H. C. 29779 be transposed.  
p. 174, April 5. The  $\times$  N.P.D.  $92^{\circ}.11'$  was afterwards found to be Bessel xii. 126, and its correct N.P.D. is  $92^{\circ}.24'$ . Also the noted times were erroneously diminished  $10^s$ , the mistake in counting not affecting the observation. No. 466 in p. 218 requires to be corrected accordingly.  
p. 174, April 10. The star named 19 Leonis Minoris is B.A.C. 3393, which has nearly the same R.A., but a very different N.P.D. So in p. 217, No. 363.  
p. 212, No. 33. The star is Bessel o. 828, the R.A. in Weisse being 1<sup>m</sup> too small, and the correct N.P.D. is  $91^{\circ}.12'$ , the N.P.D. by the Circle observation of Oct. 4. 1855 being 5' too great.  
p. 220, No. 622. The N.P.D. should be  $108^{\circ}.7'$ . See above, p. 104, Nos. 428 and 429.  
p. 351, No. 216. The N.P.D. should be  $75^{\circ}.16'$ , as given by the Circle observation of April 2, 1852. Bessel's N.P.D. is right, but that of H. C. 18325, which is the same star, is 5' too great.  
p. 356, No. 585. The N.P.D. should be  $106^{\circ}.3'$ , that of H. C. 40687 being 5' too great.  
p. 392, No. 195. The approximate R.A. should be  $5^h.39^m.28^s$ , the R.A. of H. C. 10917 being  $30^s$  too small.  
The constant of aberration is  $20''.36$  in the Nautical Almanac of 1849, as stated in p. xiii. but in those of 1850 and 1851 it is  $20''.42$ . This change is not mentioned in the part of the Introduction relating to the latter years.  
The Annual Variations in R.A. for the years 1849, 1850 and 1851, and the Annual Variations in N.P.D. for 1849, of stars in the Nautical Almanac are taken from that work. For the years 1850 and 1851 the Annual Variations in N.P.D. are all calculated by Bessel's formula, and in no instance include proper motion.

### THE PRESENT VOLUME.

- p. 6, March 3. A note, 'too late,' to the observation of H. C. 20080 is omitted. The observer expected H. C. 20061, which is the same star, its R.A. being about  $42^s$  too small.  
p. 29, Sept. 8. The object mentioned in note (h) is B. (w.) xxii. 143. The seconds of transit were 26.2, 39.2, 20.7, and 47.8 at wires I, II, V, and VII; the concluded transit,  $22.7.6.85$ ; the seconds of meridian transit, 7.23; and the apparent R.A.,  $22.7.47.68$ . See note to No. 773, p. 103.  
p. 62, Feb. 11. H. C. 15050 is 79 Geminorum.—P. 71, May 3. H. C. 21626 is B. (w.) xi. 206.—P. 71, May 4. H. C. 23948 is B.A.C. 4312.—P. 72, May 31. According to the rule of nomenclature, B.A.C. 5330 should be put for  $\beta^2$  Scorpii, and in that case  $\beta$  Scorpii may be put for  $\beta^1$  Scorpii.  
p. 143, June 16. The R.A. of H. C. 29778 agrees with that of H. C. 29779, by which name it should be called here and in p. 175. See the note to No. 496, p. 175.  
p. 168, No. 33. The R.A. of B. (w.) i. 112, which is the same star, is too great by  $10^s$ , as was ascertained by Equatorial observations Oct. 24, 1859.  
p. 175, No. 499. The verification of the observed R.A. was inadvertently omitted.  
p. 191, May 5. The  $\times$   $R. 12^h.59^m.45^s$  is B. (w.) xii. 1025. See note to No. 580, p. 218.  
pp. 254 and 255, March 4 and 15. The  $\times$  N.P.D.  $103^{\circ}.30'$  is No. 201 in p. 343, and its N.P.D. should therefore be  $103^{\circ}.26'$ . See the note to Nos. 200 and 201.  
p. 273, Aug. 17. The star B.A.C. 7322 should be called  $\theta$  Capricorni.  
The intervals of the Transit wires from the mean of all actually used from Sept. 21, 1853, to the end of May 13, 1854, are  $-40.353$ ,  $-26.870$ ,  $-13.579$ ,  $+0.067$ ,  $+13.520$ ,  $+26.907$ ,  $+40.308$  for Illumination East, and the same values in the reverse order with contrary signs for Illumination West, in accordance with the statements made in pages xxxiv. and lix. of the Introduction. The intervals given at the bottom of the pages between those dates were taken by mistake from the first Table in page xxxiv. and are consequently erroneous.  
The effect of a systematic error in the application of corrections for forms of the pivots in 1852 is considered in p. xlii. of the Introduction.  
After the printing of the first part of the Introduction it was discovered that the second paragraph of p. iv. was inadvertently transferred from the Introduction of Vol. xviii. The following paragraph should be substituted for it:  
"This method supposes that the Spirit Level gives the same Level Error as that obtained by the collimating eye-piece and reversing the Transit. As on account of the forms of the pivots this cannot be the case, several contemporaneous determinations were made by the two methods, and by comparison of the results two constants have been obtained for correcting the values given by the Spirit Level in the two positions of the instrument. Thus virtually the Level Error is obtained by the collimating eye-piece, and the Spirit Level is employed as an auxiliary, the use of which is convenient on account of its dispensing with frequent reversions."

*[The text in this block is extremely faint and illegible, appearing to be several paragraphs of a document.]*



TABLES

USED IN THE REDUCTION

OF THE TRANSIT AND CIRCLE OBSERVATIONS,

AS EXPLAINED

IN THE FOREGOING INTRODUCTION.

TABLE I.

*General Table of the Coefficients of the Collimation, Level, and Azimuth Errors, for the reduction of the Transit observations.*

The N.P.D. of the object observed =  $\delta$ , and its Zenith Distance =  $z$ .

•• See page xiii.

N.P.D.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$	N.P.D.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$	N.P.D.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$
45	-0,094	-0,012	+0,094	24	+0,165	+0,159	-0,039	75	+0,059	+0,055	+0,042
44	-0,096	-0,014	+0,096	25	+0,158	+0,154	-0,035	76	+0,069	+0,054	+0,043
43	-0,098	-0,016	+0,097	26	+0,152	+0,149	-0,031	77	+0,069	+0,053	+0,044
42	-0,100	-0,018	+0,099	27	+0,146	+0,144	-0,027	78	+0,068	+0,052	+0,044
41	-0,102	-0,020	+0,100	28	+0,141	+0,140	-0,024	79	+0,068	+0,051	+0,045
40	-0,104	-0,022	+0,102	29	+0,137	+0,136	-0,021	80	+0,068	+0,050	+0,046
39	-0,106	-0,024	+0,103	30	+0,133	+0,132	-0,018	81	+0,068	+0,049	+0,047
38	-0,109	-0,026	+0,105	31	+0,129	+0,128	-0,015	82	+0,068	+0,048	+0,047
37	-0,111	-0,029	+0,107	32	+0,126	+0,125	-0,012	83	+0,067	+0,048	+0,048
36	-0,114	-0,031	+0,109	33	+0,122	+0,122	-0,009	84	+0,067	+0,047	+0,048
35	-0,116	-0,034	+0,111	34	+0,119	+0,119	-0,007	85	+0,067	+0,046	+0,049
34	-0,119	-0,037	+0,113	35	+0,116	+0,116	-0,005	86	+0,067	+0,045	+0,050
33	-0,122	-0,040	+0,115	36	+0,114	+0,114	-0,003	87	+0,067	+0,044	+0,051
32	-0,126	-0,043	+0,118	37	+0,111	+0,111	-0,001	88	+0,067	+0,043	+0,051
31	-0,129	-0,046	+0,121	38	+0,109	+0,109	+0,001	89	+0,067	+0,042	+0,052
30	-0,133	-0,050	+0,124	39	+0,106	+0,106	+0,003	90	+0,067	+0,041	+0,053
29	-0,137	-0,054	+0,127	40	+0,104	+0,104	+0,004	91	+0,067	+0,040	+0,054
28	-0,141	-0,058	+0,130	41	+0,102	+0,102	+0,006	92	+0,067	+0,039	+0,055
27	-0,146	-0,062	+0,133	42	+0,100	+0,100	+0,007	93	+0,067	+0,038	+0,055
26	-0,152	-0,067	+0,137	43	+0,098	+0,098	+0,009	94	+0,067	+0,037	+0,056
25	-0,158	-0,072	+0,141	44	+0,096	+0,096	+0,010	95	+0,067	+0,036	+0,057
24	-0,165	-0,077	+0,145	45	+0,094	+0,094	+0,012	96	+0,067	+0,035	+0,058
23	-0,172	-0,083	+0,149	46	+0,092	+0,092	+0,014	97	+0,067	+0,034	+0,058
22	-0,179	-0,089	+0,154	47	+0,091	+0,090	+0,015	98	+0,068	+0,034	+0,059
21	-0,187	-0,096	+0,159	48	+0,090	+0,089	+0,016	99	+0,068	+0,033	+0,059
20	-0,195	-0,104	+0,165	49	+0,088	+0,087	+0,018	100	+0,068	+0,032	+0,060
19	-0,203	-0,112	+0,172	50	+0,087	+0,085	+0,019	101	+0,068	+0,031	+0,061
18	-0,216	-0,121	+0,179	51	+0,085	+0,083	+0,021	102	+0,068	+0,030	+0,062
17	-0,228	-0,131	+0,187	52	+0,084	+0,082	+0,022	103	+0,069	+0,029	+0,062
16	-0,242	-0,143	+0,195	53	+0,083	+0,081	+0,023	104	+0,069	+0,028	+0,063
15	-0,258	-0,156	+0,205	54	+0,082	+0,079	+0,024	105	+0,069	+0,027	+0,064
14	-0,276	-0,170	+0,217	55	+0,081	+0,078	+0,024	106	+0,069	+0,026	+0,065
13	-0,297	-0,187	+0,230	56	+0,080	+0,076	+0,025	107	+0,070	+0,025	+0,066
12	-0,321	-0,207	+0,245	57	+0,079	+0,075	+0,026	108	+0,070	+0,024	+0,066
11	-0,350	-0,231	+0,263	58	+0,078	+0,073	+0,027	109	+0,071	+0,023	+0,067
10	-0,384	-0,258	+0,285	59	+0,077	+0,072	+0,028	110	+0,071	+0,022	+0,068
				60	+0,077	+0,071	+0,029	111	+0,072	+0,021	+0,069
10	+0,384	+0,340	-0,179	61	+0,076	+0,070	+0,030	112	+0,072	+0,020	+0,070
11	+0,350	+0,313	-0,157	62	+0,076	+0,069	+0,031	113	+0,073	+0,018	+0,070
12	+0,321	+0,289	-0,139	63	+0,075	+0,068	+0,032	114	+0,073	+0,017	+0,071
13	+0,297	+0,269	-0,124	64	+0,075	+0,067	+0,033	115	+0,074	+0,016	+0,072
14	+0,276	+0,252	-0,111	65	+0,074	+0,066	+0,034	116	+0,075	+0,015	+0,073
15	+0,258	+0,238	-0,099	66	+0,073	+0,065	+0,035	117	+0,075	+0,014	+0,074
16	+0,242	+0,225	-0,089	67	+0,073	+0,063	+0,036	118	+0,076	+0,013	+0,075
17	+0,228	+0,213	-0,081	68	+0,072	+0,062	+0,037	119	+0,076	+0,012	+0,076
18	+0,216	+0,203	-0,073	69	+0,072	+0,061	+0,037	120	+0,077	+0,011	+0,077
19	+0,205	+0,194	-0,066	70	+0,071	+0,060	+0,038	121	+0,078	+0,010	+0,078
20	+0,195	+0,186	-0,059	71	+0,071	+0,059	+0,039	122	+0,078	+0,008	+0,079
21	+0,187	+0,178	-0,053	72	+0,070	+0,058	+0,040	123	+0,079	+0,007	+0,080
22	+0,179	+0,171	-0,048	73	+0,070	+0,057	+0,041	124	+0,080	+0,005	+0,080
23	+0,172	+0,165	-0,043	74	+0,069	+0,056	+0,041	125	+0,081	+0,004	+0,081



TABLE II.

*Table of the Coefficients of the Collimation, Level, and Azimuth Errors,  
for the reduction of Transit observations of the Fundamental Stars.*

The Star's N.P.D. =  $\delta$ , and its Zenith Distance =  $z$ .

\* \* \* See page xiii.

Star.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$	Star.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$
$\alpha$ Andromedæ.....	+0,076	+0,069	+0,031	Arcturus.....	+0,071	+0,060	+0,038
$\beta$ Ceti.....	+0,070	+0,023	+0,067	$\epsilon$ Bootis.....	+0,075	+0,068	+0,031
$\alpha$ Arietis.....	+0,072	+0,063	+0,036	$\alpha^2$ Libræ.....	+0,069	+0,026	+0,064
$\alpha$ Ceti.....	+0,067	+0,044	+0,050	$\alpha$ Coronæ.....	+0,075	+0,068	+0,032
Aldebaran.....	+0,069	+0,056	+0,041	$\alpha$ Serpentis.....	+0,067	+0,047	+0,048
Rigel.....	+0,067	+0,033	+0,059	$\delta$ Ophiuchi.....	+0,067	+0,038	+0,055
$\beta$ Tauri.....	+0,076	+0,069	+0,030	Antares.....	+0,074	+0,015	+0,073
$\alpha$ Orionis.....	+0,067	+0,048	+0,047	$\alpha$ Herculis.....	+0,069	+0,055	+0,042
Sirius.....	+0,070	+0,025	+0,065	$\alpha$ Ophiuchi.....	+0,068	+0,053	+0,044
Castor.....	+0,079	+0,074	+0,027	$\mu^1$ Sagittarii.....	+0,071	+0,021	+0,068
Procyon.....	+0,067	+0,046	+0,049	$\beta$ Lyræ.....	+0,080	+0,075	+0,026
Pollux.....	+0,076	+0,069	+0,031	$\zeta$ Aquilæ.....	+0,069	+0,054	+0,043
$\epsilon$ Hydræ.....	+0,067	+0,047	+0,048	$\gamma$ Aquilæ.....	+0,068	+0,050	+0,045
$\alpha$ Hydræ.....	+0,067	+0,033	+0,058	$\alpha$ Aquilæ.....	+0,067	+0,049	+0,047
Regulus.....	+0,068	+0,053	+0,044	$\beta$ Aquilæ.....	+0,067	+0,046	+0,048
$\delta$ Leonis.....	+0,072	+0,061	+0,037	$\alpha^2$ Capricorni.....	+0,068	+0,029	+0,062
$\beta$ Leonis.....	+0,069	+0,055	+0,041	$\beta$ Aquarii.....	+0,067	+0,035	+0,057
$\beta$ Corvi.....	+0,072	+0,019	+0,070	$\alpha$ Aquarii.....	+0,067	+0,040	+0,053
Spica.....	+0,068	+0,031	+0,060	$\alpha$ Pegasi.....	+0,069	+0,054	+0,042

The above Table was calculated for the mean N.P.D. of the Stars, Jan. 1, 1860, and may be used fourteen years before or after that date.

The following are the coefficients for Polaris,  $\delta$  Ursæ Minoris, and 51 (Hev.) Cephei, calculated for the year 1850 +  $n$ .

Star.	$\frac{1}{15 \sin \delta}$	$\frac{\cos z}{15 \sin \delta}$	$\frac{\sin z}{15 \sin \delta}$
Polaris.....	+2,56721 + 0,009593 $\times n$	+2,06905 + 0,007584 $\times n$	-1,51973 - 0,005879 $\times n$
Polaris SP.....	-2,56721 - 0,009593 $\times n$	-1,98736 - 0,007584 $\times n$	+1,62511 + 0,005879 $\times n$
$\delta$ Ursæ Minoris.....	+1,12383 + 0,000165 $\times n$	+0,92746 + 0,000131 $\times n$	-0,63468 - 0,000101 $\times n$
$\delta$ Ursæ Minoris SP...	-1,12383 - 0,000165 $\times n$	-0,84576 - 0,000131 $\times n$	+0,74006 + 0,000101 $\times n$
51 (Hev.) Cephei.....	+1,39149 - 0,000365 $\times n$	+1,13929 - 0,000289 $\times n$	-0,79891 + 0,000224 $\times n$
51 (Hev.) Cephei SP.	-1,39149 + 0,000365 $\times n$	-1,05760 + 0,000289 $\times n$	+0,90428 - 0,000224 $\times n$

TABLE III.

Corrections for curvature of path of Polaris and  $\delta$  Ursæ Minoris.

\*\* See page xxi.

Interval from Meridian Transit.	Correction for Polaris Decl. = $88^{\circ}.29' + n''$ .	Differ <sup>s</sup> .	Interval from Meridian Transit.	Correction for Polaris Decl. = $88^{\circ}.29' + n''$ .	Differ <sup>s</sup> .	Interval from Meridian Transit.	Correction for $\delta$ Ursæ Minoris Decl. = $86^{\circ}.35' + n''$ .	Differ <sup>s</sup> .
m. s.	"		m. s.	"		m. s.	"	
0.20	0,01	1	11.40	7,07 - 0,0013 n	41	0.20	0,01	4
0.40	0,02	3	12. 0	7,48 - 0,0014 n	42	0.40	0,05	7
1. 0	0,05	4	12.20	7,90 - 0,0014 n	43	1. 0	0,12	9
1.20	0,09	5	12.40	8,33 - 0,0015 n	45	1.20	0,21	11
1.40	0,14	7	13. 0	8,78 - 0,0016 n	45	1.40	0,32	15
2. 0	0,21	7	13.20	9,23 - 0,0017 n	47	2. 0	0,47	17
2.20	0,28 - 0,0001 n	9	13.40	9,70 - 0,0018 n	48	2.20	0,64 - 0,0001 n	19
2.40	0,37 - 0,0001 n	10	14. 0	10,18 - 0,0019 n	49	2.40	0,83 - 0,0001 n	22
3. 0	0,47 - 0,0001 n	11	14.20	10,67 - 0,0020 n	50	3. 0	1,05 - 0,0001 n	25
3.20	0,58 - 0,0001 n	12	14.40	11,17 - 0,0020 n	51	3.20	1,30 - 0,0001 n	27
3.40	0,70 - 0,0001 n	13	15. 0	11,68 - 0,0021 n	53	3.40	1,57 - 0,0001 n	30
4. 0	0,83 - 0,0002 n	15	15.20	12,21 - 0,0022 n	54	4. 0	1,87 - 0,0002 n	32
4.20	0,98 - 0,0002 n	15	15.40	12,75 - 0,0023 n	54	4.20	2,19 - 0,0002 n	35
4.40	1,13 - 0,0002 n	17	16. 0	13,29 - 0,0024 n	56	4.40	2,54 - 0,0002 n	38
5. 0	1,30 - 0,0002 n	18	16.20	13,85 - 0,0025 n	57	5. 0	2,92 - 0,0002 n	40
5.20	1,48 - 0,0003 n	19	16.40	14,42 - 0,0026 n	59	5.20	3,32 - 0,0003 n	43
5.40	1,67 - 0,0003 n	20	17. 0	15,01 - 0,0027 n	59	5.40	3,75 - 0,0003 n	46
6. 0	1,87 - 0,0003 n	21	17.20	15,60 - 0,0029 n	61	6. 0	4,21 - 0,0003 n	48
6.20	2,08 - 0,0004 n	23	17.40	16,21 - 0,0030 n	61	6.20	4,69 - 0,0004 n	50
6.40	2,31 - 0,0004 n	24	18. 0	16,82 - 0,0031 n	63	6.40	5,19 - 0,0004 n	53
7. 0	2,55 - 0,0005 n	24	18.20	17,45 - 0,0032 n	64	7. 0	5,72 - 0,0005 n	56
7.20	2,79 - 0,0005 n	26	18.40	18,09 - 0,0033 n	65	7.20	6,28 - 0,0005 n	59
7.40	3,05 - 0,0006 n	27	19. 0	18,74 - 0,0034 n	67	7.40	6,87 - 0,0006 n	61
8. 0	3,32 - 0,0006 n	29	19.20	19,41 - 0,0036 n	67	8. 0	7,48 - 0,0006 n	63
8.20	3,61 - 0,0007 n	29	19.40	20,08 - 0,0037 n	69	8.20	8,11 - 0,0007 n	66
8.40	3,90 - 0,0007 n	31	20. 0	20,77 - 0,0038 n	69	8.40	8,77 - 0,0007 n	69
9. 0	4,21 - 0,0008 n	31	20.20	21,46 - 0,0039 n	71	9. 0	9,46 - 0,0008 n	71
9.20	4,52 - 0,0008 n	33	20.40	22,17 - 0,0041 n	72	9.20	10,17 - 0,0008 n	74
9.40	4,85 - 0,0009 n	34	21. 0	22,89 - 0,0042 n	74	9.40	10,91 - 0,0009 n	77
10. 0	5,19 - 0,0010 n	36	21.20	23,63 - 0,0043 n	74	10. 0	11,68 - 0,0009 n	79
10.20	5,55 - 0,0010 n	36	21.40	24,37 - 0,0045 n	75	10.20	12,47 - 0,0010 n	82
10.40	5,91 - 0,0011 n	37	22. 0	25,12 - 0,0046 n	77	10.40	13,29 - 0,0011 n	84
11. 0	6,28 - 0,0012 n	39	22.20	25,89 - 0,0047 n	78	11. 0	14,13 - 0,0011 n	87
11.20	6,67 - 0,0012 n	40	22.40	26,67 - 0,0049 n	79	11.20	15,00 - 0,0012 n	90
11.40	7,07 - 0,0013 n		23. 0	27,46 - 0,0050 n		11.40	15,90 - 0,0013 n	

\*\* The sign of the Correction is + above Pole and - below Pole for a direct observation; and - above Pole and + below Pole for a reflection observation.

TABLE IV.

Corrections for curvature of path at given Intervals from the middle wire for given Declinations.

\*\* See page xxi.

Decl <sup>n</sup>	Int. $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$
5	0,00	0,00	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,18	0,21	0,24	0,27	0,30
10	0,00	0,01	0,01	0,03	0,04	0,06	0,08	0,11	0,13	0,17	0,20	0,24	0,28	0,32	0,37	0,42	0,48	0,54	0,60
15	0,00	0,01	0,02	0,04	0,06	0,09	0,12	0,16	0,20	0,25	0,30	0,36	0,43	0,49	0,57	0,64	0,73	0,82	0,91
20	0,00	0,01	0,03	0,05	0,09	0,12	0,17	0,22	0,28	0,34	0,41	0,49	0,58	0,67	0,77	0,88	0,99	1,11	1,23
22	0,00	0,02	0,03	0,06	0,09	0,14	0,19	0,24	0,31	0,38	0,46	0,55	0,64	0,74	0,85	0,97	1,10	1,23	1,37
24	0,00	0,02	0,04	0,07	0,10	0,15	0,20	0,27	0,34	0,42	0,51	0,60	0,71	0,82	0,94	1,07	1,21	1,36	1,51
26	0,00	0,02	0,04	0,07	0,11	0,16	0,22	0,29	0,37	0,46	0,55	0,66	0,77	0,90	1,03	1,17	1,32	1,48	1,65
28	0,01	0,02	0,05	0,08	0,12	0,18	0,24	0,32	0,40	0,50	0,60	0,72	0,84	0,98	1,12	1,28	1,44	1,62	1,80
30	0,01	0,02	0,05	0,09	0,14	0,20	0,27	0,35	0,44	0,54	0,66	0,78	0,92	1,06	1,22	1,39	1,57	1,76	1,96
32	0,01	0,02	0,05	0,09	0,15	0,21	0,29	0,38	0,48	0,59	0,71	0,85	0,99	1,15	1,32	1,50	1,70	1,90	2,12
34	0,01	0,03	0,06	0,10	0,16	0,23	0,31	0,41	0,51	0,63	0,77	0,91	1,07	1,24	1,43	1,62	1,83	2,05	2,29
36	0,01	0,03	0,06	0,11	0,17	0,25	0,33	0,44	0,55	0,68	0,83	0,98	1,15	1,34	1,54	1,75	1,97	2,21	2,46
38	0,01	0,03	0,07	0,12	0,18	0,26	0,36	0,47	0,59	0,73	0,89	1,06	1,24	1,44	1,65	1,88	2,12	2,38	2,65
40	0,01	0,03	0,07	0,13	0,20	0,28	0,39	0,50	0,64	0,79	0,95	1,14	1,33	1,54	1,77	2,02	2,28	2,55	2,85
42	0,01	0,03	0,08	0,14	0,21	0,30	0,41	0,54	0,69	0,85	1,02	1,22	1,43	1,66	1,90	2,17	2,44	2,74	3,05
44	0,01	0,04	0,08	0,15	0,23	0,33	0,44	0,58	0,73	0,91	1,10	1,31	1,53	1,78	2,04	2,32	2,62	2,94	3,27



*Corrections for curvature of path at given Intervals from the middle wire for given Declinations, continued.*

Decl <sup>n</sup> .	Int. $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$
45	0,01	0,04	0,08	0,15	0,23	0,34	0,46	0,60	0,76	0,94	1,14	1,35	1,59	1,84	2,11	2,40	2,71	3,04	3,39
46	0,01	0,04	0,09	0,16	0,24	0,35	0,48	0,62	0,79	0,97	1,18	1,40	1,64	1,91	2,19	2,49	2,81	3,15	3,51
47	0,01	0,04	0,09	0,16	0,25	0,36	0,49	0,64	0,82	1,01	1,22	1,45	1,70	1,97	2,27	2,58	2,91	3,26	3,64
48	0,01	0,04	0,09	0,17	0,26	0,38	0,51	0,67	0,85	1,04	1,26	1,50	1,76	2,05	2,35	2,67	3,02	3,38	3,77
49	0,01	0,04	0,10	0,17	0,27	0,39	0,53	0,69	0,88	1,08	1,31	1,56	1,83	2,12	2,43	2,77	3,12	3,50	3,90
50	0,01	0,04	0,10	0,18	0,28	0,40	0,55	0,72	0,91	1,12	1,35	1,61	1,89	2,19	2,52	2,87	3,24	3,63	4,04
51	0,01	0,05	0,10	0,19	0,29	0,42	0,57	0,74	0,94	1,16	1,40	1,67	1,96	2,27	2,61	2,97	3,35	3,76	4,19
52	0,01	0,05	0,11	0,19	0,30	0,43	0,59	0,77	0,97	1,20	1,45	1,73	2,03	2,36	2,71	3,08	3,47	3,90	4,34
53	0,01	0,05	0,11	0,20	0,31	0,45	0,61	0,80	1,01	1,25	1,51	1,80	2,11	2,44	2,80	3,19	3,60	4,04	4,50
54	0,01	0,05	0,12	0,21	0,32	0,47	0,63	0,83	1,05	1,29	1,56	1,86	2,18	2,53	2,91	3,31	3,74	4,19	4,67
55	0,01	0,05	0,12	0,21	0,34	0,48	0,66	0,86	1,09	1,34	1,62	1,93	2,27	2,63	3,02	3,43	3,88	4,35	4,84
56	0,01	0,06	0,13	0,22	0,35	0,50	0,68	0,89	1,13	1,39	1,69	2,01	2,35	2,73	3,13	3,57	4,02	4,51	5,03
57	0,01	0,06	0,13	0,23	0,36	0,52	0,71	0,93	1,17	1,45	1,75	2,08	2,44	2,84	3,25	3,70	4,18	4,67	5,22
58	0,02	0,06	0,14	0,24	0,38	0,54	0,74	0,96	1,22	1,50	1,82	2,16	2,54	2,95	3,38	3,85	4,34	4,87	5,43
59	0,02	0,06	0,14	0,25	0,39	0,56	0,77	1,00	1,27	1,56	1,89	2,25	2,64	3,07	3,52	4,00	4,52	5,07	5,64
60	0,02	0,07	0,15	0,26	0,41	0,59	0,80	1,04	1,32	1,63	1,97	2,34	2,75	3,19	3,66	4,17	4,70	5,27	5,87
61	0,02	0,07	0,15	0,27	0,42	0,61	0,83	1,08	1,37	1,69	2,05	2,44	2,86	3,32	3,81	4,34	4,90	5,49	6,12
62	0,02	0,07	0,16	0,28	0,44	0,64	0,87	1,13	1,43	1,77	2,14	2,54	2,99	3,46	3,97	4,52	5,11	5,72	6,38
63	0,02	0,07	0,17	0,29	0,46	0,66	0,90	1,18	1,49	1,84	2,23	2,65	3,12	3,61	4,15	4,72	5,33	5,97	6,65
64	0,02	0,08	0,17	0,31	0,48	0,69	0,94	1,23	1,56	1,93	2,33	2,77	3,25	3,77	4,33	4,93	5,57	6,24	6,95
65	0,02	0,08	0,18	0,32	0,50	0,73	0,99	1,29	1,63	2,01	2,44	2,90	3,40	3,95	4,53	5,16	5,82	6,53	7,27
66. 0	0,02	0,08	0,19	0,34	0,53	0,76	1,03	1,35	1,71	2,11	2,55	3,04	3,57	4,14	4,75	5,40	6,10	6,84	7,62
66. 30	0,02	0,09	0,19	0,35	0,54	0,78	1,06	1,38	1,75	2,16	2,61	3,11	3,65	4,23	4,86	5,53	6,24	7,00	7,80
67. 0	0,02	0,09	0,20	0,35	0,55	0,80	1,08	1,42	1,79	2,21	2,68	3,19	3,74	4,34	4,98	5,67	6,39	7,17	7,99
67. 30	0,02	0,09	0,20	0,36	0,57	0,82	1,11	1,45	1,84	2,27	2,74	3,27	3,83	4,45	5,10	5,81	6,55	7,35	8,19
68. 0	0,02	0,09	0,21	0,37	0,58	0,84	1,14	1,49	1,88	2,32	2,81	3,35	3,93	4,56	5,23	5,95	6,72	7,53	8,39
68. 30	0,02	0,10	0,21	0,38	0,60	0,86	1,17	1,53	1,93	2,38	2,89	3,43	4,03	4,67	5,37	6,11	6,89	7,73	8,61
69. 0	0,02	0,10	0,22	0,39	0,61	0,88	1,20	1,57	1,98	2,45	2,96	3,52	4,14	4,80	5,51	6,26	7,07	7,93	8,83
69. 30	0,03	0,10	0,23	0,40	0,63	0,90	1,23	1,61	2,04	2,51	3,04	3,62	4,25	4,92	5,65	6,43	7,26	8,14	9,07
70. 0	0,03	0,10	0,23	0,41	0,65	0,93	1,26	1,65	2,09	2,58	3,12	3,72	4,36	5,06	5,81	6,61	7,46	8,36	9,32
70. 30	0,03	0,11	0,24	0,42	0,66	0,96	1,30	1,70	2,15	2,65	3,21	3,82	4,48	5,20	5,97	6,79	7,67	8,60	9,58
71. 0	0,03	0,11	0,25	0,44	0,68	0,98	1,34	1,75	2,21	2,73	3,30	3,93	4,61	5,35	6,14	6,98	7,88	8,84	9,85
71. 30	0,03	0,11	0,25	0,45	0,70	1,01	1,38	1,80	2,27	2,81	3,40	4,04	4,74	5,50	6,32	7,19	8,11	9,10	10,13
72. 0	0,03	0,12	0,26	0,46	0,72	1,04	1,42	1,85	2,34	2,89	3,50	4,16	4,89	5,67	6,50	7,40	8,35	9,37	10,44
72. 30	0,03	0,12	0,27	0,48	0,74	1,07	1,46	1,91	2,41	2,98	3,61	4,29	5,04	5,84	6,70	7,63	8,61	9,65	10,75
73. 0	0,03	0,12	0,28	0,49	0,77	1,11	1,51	1,97	2,49	3,07	3,72	4,42	5,19	6,02	6,91	7,87	8,88	9,96	11,09
73. 30	0,03	0,13	0,29	0,51	0,79	1,14	1,55	2,03	2,57	3,17	3,84	4,57	5,36	6,22	7,14	8,12	9,16	10,28	11,45
74. 0	0,03	0,13	0,29	0,52	0,82	1,18	1,61	2,10	2,65	3,28	3,96	4,72	5,54	6,42	7,37	8,39	9,47	10,61	11,83
74. 30	0,03	0,14	0,30	0,54	0,85	1,22	1,66	2,17	2,74	3,39	4,10	4,88	5,72	6,64	7,62	8,67	9,79	10,98	12,23
75. 0	0,04	0,14	0,32	0,56	0,88	1,26	1,72	2,24	2,84	3,51	4,24	5,05	5,92	6,87	7,89	8,97	10,13	11,36	12,65
75. 20	0,04	0,14	0,32	0,57	0,90	1,29	1,76	2,30	2,91	3,59	4,34	5,17	6,07	7,04	8,08	9,19	10,37	11,63	12,96
75. 40	0,04	0,15	0,33	0,59	0,92	1,32	1,80	2,35	2,98	3,68	4,45	5,29	6,21	7,21	8,27	9,41	10,62	11,91	13,27
76. 0	0,04	0,15	0,34	0,60	0,94	1,36	1,85	2,41	3,05	3,77	4,56	5,43	6,37	7,38	8,48	9,65	10,89	12,21	13,60
76. 20	0,04	0,15	0,35	0,62	0,97	1,39	1,89	2,47	3,13	3,86	4,67	5,56	6,53	7,57	8,69	9,89	11,16	12,52	13,94
76. 40	0,04	0,16	0,36	0,63	0,99	1,43	1,94	2,54	3,21	3,96	4,80	5,71	6,70	7,77	8,92	10,15	11,45	12,84	14,31
77. 0	0,04	0,16	0,37	0,65	1,02	1,46	1,99	2,60	3,30	4,07	4,92	5,86	6,88	7,97	9,15	10,42	11,76	13,18	14,69
77. 20	0,04	0,17	0,38	0,67	1,05	1,50	2,05	2,67	3,39	4,18	5,06	6,02	7,06	8,19	9,40	10,70	12,08	13,54	15,09
77. 40	0,04	0,17	0,39	0,69	1,07	1,55	2,11	2,75	3,48	4,30	5,20	6,19	7,26	8,42	9,67	11,00	12,42	13,92	15,51
78. 0	0,04	0,18	0,40	0,71	1,10	1,59	2,17	2,83	3,58	4,42	5,35	6,36	7,47	8,66	9,94	11,31	12,77	14,32	15,95
78. 20	0,05	0,18	0,41	0,73	1,14	1,64	2,23	2,91	3,68	4,55	5,50	6,55	7,69	8,92	10,24	11,65	13,15	14,74	16,42
78. 30	0,05	0,18	0,42	0,74	1,15	1,66	2,26	2,95	3,74	4,62	5,59	6,65	7,80	9,05	10,39	11,82	13,34	14,96	16,67
78. 40	0,05	0,19	0,42	0,75	1,17	1,69	2,30	3,00	3,80	4,69	5,67	6,75	7,92	9,19	10,54	12,00	13,54	15,18	16,92

\* \* For a direct observation the sign of the Correction is + North of the Equator and above the Pole, and - South of the Equator and below the Pole. For a reflection observation the signs are the opposite to those for a direct observation.



TABLE V.

*Corrections for change of N.P.D. of the Sun and Planets in one interval from the middle wire, for given declinations and given horary variations of declination.*

\* \* See page xxi.

Decl <sup>n</sup> .	Hor. Var. 1"	2"	3"	4"	5"	6"	7"	8"	9"	10"
0	0,0046	0,0092	0,0138	0,0184	0,0231	0,0277	0,0323	0,0369	0,0415	0,0461
1	0,0046	0,0092	0,0138	0,0184	0,0231	0,0277	0,0323	0,0369	0,0415	0,0461
2	0,0046	0,0092	0,0138	0,0185	0,0231	0,0277	0,0323	0,0369	0,0415	0,0461
3	0,0046	0,0092	0,0139	0,0185	0,0231	0,0277	0,0323	0,0369	0,0416	0,0462
4	0,0046	0,0092	0,0139	0,0185	0,0231	0,0277	0,0324	0,0370	0,0416	0,0462
5	0,0046	0,0093	0,0139	0,0185	0,0231	0,0278	0,0324	0,0370	0,0417	0,0463
6	0,0046	0,0093	0,0139	0,0185	0,0232	0,0278	0,0325	0,0371	0,0417	0,0464
7	0,0046	0,0093	0,0139	0,0186	0,0232	0,0279	0,0325	0,0372	0,0418	0,0465
8	0,0047	0,0093	0,0140	0,0186	0,0233	0,0279	0,0326	0,0373	0,0419	0,0466
9	0,0047	0,0093	0,0140	0,0187	0,0233	0,0280	0,0327	0,0373	0,0420	0,0467
10	0,0047	0,0094	0,0140	0,0187	0,0234	0,0281	0,0328	0,0375	0,0421	0,0468
11	0,0047	0,0094	0,0141	0,0188	0,0235	0,0282	0,0329	0,0376	0,0423	0,0470
12	0,0047	0,0094	0,0141	0,0189	0,0236	0,0283	0,0330	0,0377	0,0424	0,0471
13	0,0047	0,0095	0,0142	0,0189	0,0237	0,0284	0,0331	0,0379	0,0426	0,0473
14	0,0048	0,0095	0,0143	0,0190	0,0238	0,0285	0,0333	0,0380	0,0428	0,0475
15	0,0048	0,0095	0,0143	0,0191	0,0239	0,0286	0,0334	0,0382	0,0430	0,0477
16	0,0048	0,0096	0,0144	0,0192	0,0240	0,0288	0,0336	0,0384	0,0432	0,0480
17	0,0048	0,0096	0,0145	0,0193	0,0241	0,0289	0,0338	0,0386	0,0434	0,0482
18	0,0048	0,0097	0,0145	0,0194	0,0242	0,0291	0,0339	0,0388	0,0436	0,0485
19	0,0049	0,0098	0,0146	0,0195	0,0244	0,0293	0,0341	0,0390	0,0439	0,0488
20	0,0049	0,0098	0,0147	0,0196	0,0245	0,0294	0,0343	0,0393	0,0442	0,0491
21	0,0049	0,0099	0,0148	0,0198	0,0247	0,0296	0,0346	0,0395	0,0445	0,0494
22	0,0050	0,0099	0,0149	0,0199	0,0249	0,0298	0,0348	0,0398	0,0448	0,0497
23	0,0050	0,0100	0,0150	0,0200	0,0250	0,0301	0,0351	0,0401	0,0451	0,0501
24	0,0050	0,0101	0,0151	0,0202	0,0252	0,0303	0,0353	0,0404	0,0454	0,0505
25	0,0051	0,0102	0,0153	0,0204	0,0254	0,0305	0,0356	0,0407	0,0458	0,0509
26	0,0051	0,0103	0,0154	0,0205	0,0257	0,0308	0,0359	0,0410	0,0462	0,0513
27	0,0052	0,0104	0,0155	0,0207	0,0259	0,0311	0,0362	0,0414	0,0466	0,0518
28	0,0052	0,0104	0,0157	0,0209	0,0261	0,0313	0,0366	0,0418	0,0470	0,0522
29	0,0053	0,0105	0,0158	0,0211	0,0264	0,0316	0,0369	0,0422	0,0474	0,0527
30	0,0053	0,0106	0,0160	0,0213	0,0266	0,0319	0,0373	0,0426	0,0479	0,0532
31	0,0054	0,0108	0,0161	0,0215	0,0269	0,0323	0,0377	0,0430	0,0484	0,0538
32	0,0054	0,0109	0,0163	0,0217	0,0272	0,0326	0,0381	0,0435	0,0489	0,0544
33	0,0055	0,0110	0,0165	0,0220	0,0275	0,0330	0,0385	0,0440	0,0495	0,0550
34	0,0056	0,0111	0,0167	0,0222	0,0278	0,0334	0,0389	0,0445	0,0501	0,0556
35	0,0056	0,0113	0,0169	0,0225	0,0281	0,0338	0,0394	0,0450	0,0507	0,0563
36	0,0057	0,0114	0,0171	0,0228	0,0285	0,0342	0,0399	0,0456	0,0513	0,0570
37	0,0058	0,0115	0,0173	0,0231	0,0289	0,0346	0,0404	0,0462	0,0520	0,0577
38	0,0059	0,0117	0,0176	0,0234	0,0293	0,0351	0,0410	0,0468	0,0527	0,0585
39	0,0059	0,0119	0,0178	0,0237	0,0297	0,0356	0,0415	0,0475	0,0534	0,0593
40	0,0060	0,0120	0,0181	0,0241	0,0301	0,0361	0,0421	0,0482	0,0542	0,0602

\* \* When the sign of the horary variation of declination in the Nautical Almanac is -, the sign of the correction is + before passing the middle wire and - after passing. When the sign of the horary variation of declination is + in the Nautical Almanac, the sign of the correction is - before passing the middle wire and + after passing.



TABLE VI.

*Table of corrections for reducing the Tabular R.A. and N.P.D. of the Sun, Moon, and Planets, from the Greenwich to the Cambridge transit.*

\* \* See page xxx.

Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.	Var. of Decl. or R.A. in 1 <sup>h</sup> .	Var. in 22 <sup>h</sup> ,75.
a. or "	a. or "	s. or "	a. or "	s. or "	a. or "	s. or "	a. or "	s. or "	a. or "	s. or "	a. or "	s. or "	a. or "	s. or "	a. or "
1	0,006	26	0,164	51	0,322	76	0,480	101	0,638	126	0,796	151	0,954	176	1,112
2	0,013	27	0,171	52	0,329	77	0,487	102	0,645	127	0,803	152	0,961	177	1,119
3	0,019	28	0,177	53	0,335	78	0,493	103	0,651	128	0,809	153	0,967	178	1,125
4	0,025	29	0,183	54	0,341	79	0,499	104	0,657	129	0,815	154	0,973	179	1,131
5	0,032	30	0,190	55	0,348	80	0,506	105	0,664	130	0,822	155	0,980	180	1,138
6	0,038	31	0,196	56	0,354	81	0,512	106	0,670	131	0,828	156	0,986	182	1,150
7	0,044	32	0,202	57	0,360	82	0,518	107	0,676	132	0,834	157	0,992	184	1,163
8	0,051	33	0,209	58	0,367	83	0,525	108	0,683	133	0,840	158	0,998	186	1,175
9	0,057	34	0,215	59	0,373	84	0,531	109	0,689	134	0,847	159	1,005	188	1,188
10	0,063	35	0,221	60	0,379	85	0,537	110	0,695	135	0,853	160	1,011	190	1,201
11	0,070	36	0,228	61	0,385	86	0,543	111	0,701	136	0,859	161	1,017	192	1,213
12	0,076	37	0,234	62	0,392	87	0,550	112	0,708	137	0,866	162	1,024	194	1,226
13	0,082	38	0,240	63	0,398	88	0,556	113	0,714	138	0,872	163	1,030	196	1,239
14	0,088	39	0,246	64	0,404	89	0,562	114	0,720	139	0,878	164	1,036	198	1,251
15	0,095	40	0,253	65	0,411	90	0,569	115	0,727	140	0,885	165	1,043	200	1,264
16	0,101	41	0,259	66	0,417	91	0,575	116	0,733	141	0,891	166	1,049	300	1,896
17	0,107	42	0,265	67	0,423	92	0,581	117	0,739	142	0,897	167	1,055	400	2,528
18	0,114	43	0,272	68	0,430	93	0,588	118	0,746	143	0,904	168	1,062	500	3,160
19	0,120	44	0,278	69	0,436	94	0,594	119	0,752	144	0,910	169	1,068	600	3,792
20	0,126	45	0,284	70	0,442	95	0,600	120	0,758	145	0,916	170	1,074	700	4,424
21	0,133	46	0,291	71	0,449	96	0,607	121	0,765	146	0,923	171	1,081	800	5,056
22	0,139	47	0,297	72	0,455	97	0,613	122	0,771	147	0,929	172	1,087	900	5,687
23	0,145	48	0,303	73	0,461	98	0,619	123	0,777	148	0,935	173	1,093	1000	6,319
24	0,152	49	0,310	74	0,468	99	0,626	124	0,784	149	0,942	174	1,100	1100	6,951
25	0,158	50	0,316	75	0,474	100	0,632	125	0,790	150	0,948	175	1,106	1200	7,583

\* \* The correction to be applied to the Tabular R.A. has the *opposite* sign to that of the variation of R.A. for one hour in the Nautical Almanac.

The correction to be applied to the Tabular N.P.D. has the *same* sign as that of the variation of declination for one hour in the Nautical Almanac.

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APPARENT RIGHT ASCENSIONS

OBSERVED WITH

THE TRANSIT

IN THE YEAR 1852.

Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Jan. 2	Castor .....	....	....	....	31,8	47,7	3,4	19,5	7.23.31,73	+0,9	+1,3	+6,4	32,24	97,11	1,52	7.25.9,31			T.
	Procyon.....	15,7	28,8	42,2	56,2	9,5	23,1	36,2	7.29.55,96				56,51	97,03		7.31.33,58			T.
	Pollux.....	52,0	7,3	22,3	37,9	53,2	8,4	23,7	7.34.37,83				38,37	97,10		7.36.15,45			T.
Jan. 3	(a) ☉ 1 L.....	6,5	21,3	36,0	50,2	5,3	19,8	34,4	18.50.50,50				51,28		1,52	18.52.29,08			T.
	☉ 2 L.....	28,6	43,1	57,4	12,3	27,2	41,6	56,4	18.53.12,37				13,15			18.54.50,96			T.
	α Aquilæ.....	12,4	25,9	39,3	53,2	6,6	20,5	33,9	19.41.53,11				53,64	97,86					T.
	(b) ☉ 1 L.....	4,7	18,9	33,2	47,7	2,1	16,4	30,8	3.56.47,69				48,22			3.58.26,60			T.
	(c) Aldebaran.....	....	....	....	47,3	1,2	15,1	29,2	4.25.47,17				47,70	98,39					T.
Jan. 6	(d) ☉ 1 L.....	13,3	28,1	42,3	57,8	12,1	26,9	41,1	19.3.57,37		+1,2		58,15		1,44	19.5.40,71			B.
	☉ 2 L.....	35,1	50,1	4,2	19,2	33,7	48,2	3,1	19.6.19,09				19,87			19.8.2,43			B.
Jan. 7	(d)(e) ☉ 1 L.....	....	....	4,1	19,1	33,6	48,0	2,5	19.8.18,88				19,66			19.10.3,67			B.
	☉ 2 L.....	....	....	26,0	40,4	54,8	9,4	24,0	19.10.40,34				41,12			19.12.25,13			B.
	H. C. 1294.....	52,1	6,2	20,2	34,9	49,0	3,1	17,2	0.38.34,67				35,43			0.40.19,77			B.
	Castor.....	....	52,2	8,1	24,2	40,1	56,2	....	7.23.24,16				24,66	104,77					B.
	Procyon.....	....	....	34,7	48,4	1,9	15,3	28,9	7.29.48,34				48,89	104,72					B.
	κ Geminorum.....	....	....	....	45,7	0,1	15,2	30,0	7.33.45,51				46,07			7.35.30,83			B.
	☉ 2 L.....	46,1	1,1	15,8	30,9	45,8	0,5	15,4	7.56.30,80				31,36			7.58.16,14			B.
Jan. 9	(b) α Arietis.....	18,2	33,0	47,2	2,1	16,8	31,1	45,8	1.57.2,03				2,59	107,24	1,51				B.
Jan. 10	α Ceti.....	2,6	16,1	29,6	43,1	56,8	10,1	23,6	2.52.43,13				43,69	108,86	1,56				B.
	B. (w.) II. 1082...	23,5	37,1	50,9	5,0	18,6	32,1	46,0	2.59.4,74				5,26			3.0.54,12			B.
	(f) H. C. 5967.....	10,9	25,1	39,0	53,1	7,4	21,5	35,6	3.3.53,23				53,77			3.5.42,64			B.
	B. (w.) III. 173...	41,6	55,4	9,1	23,1	37,1	51,0	4,8	3.8.23,16				23,68			3.10.12,56			B.
Jan. 17	☉ 1 L.....	40,3	54,8	9,0	23,8	38,0	52,8	7,0	19.51.23,67		+1,5		24,45		1,58	19.53.23,28			B.
	☉ 2 L.....	0,1	14,4	28,8	43,6	58,1	12,2	26,7	19.53.43,41				44,19			19.55.43,03			B.
	Rigel.....	45,2	58,7	12,1	25,8	39,6	53,1	6,7	5.5.25,89				26,59	119,32		5.7.26,04			B.
	H. C. 9929.....	28,1	43,0	57,7	13,0	27,7	42,2	57,2	5.9.12,70				13,28			5.11.12,73			B.
	H. C. 10007.....	....	7,1	22,1	37,9	53,2	8,6	....	5.11.37,78				38,32			5.13.37,77			B.
	β Tauri.....	10,8	26,1	41,0	56,7	11,8	27,3	42,3	5.14.56,57				57,11	119,54		5.16.56,57			B.
	(g) Sirius.....	....	10,1	23,8	37,8	51,9	6,0	19,8	6.36.37,89				38,65	119,57		6.38.38,19			B.
Jan. 19	(h) ☉ 1 L.....	9,5	24,0	38,1	52,8	7,4	21,6	36,0	19.59.52,77				53,54		1,54	20.1.55,59			B.
	☉ 2 L.....	....	....	57,6	12,2	26,8	41,1	55,3	20.2.12,21				12,98			20.4.15,04			B.
	α Ceti.....	48,9	2,3	15,7	29,4	43,2	56,3	9,8	2.52.29,37				29,95	122,50					B.
Jan. 22	(i) ☉ 1 L.....	48,5	2,8	17,0	31,6	46,0	0,1	14,6	20.14.31,51				32,28		1,39	20.14.38,77			B.
	☉ 2 L.....	....	21,6	35,8	50,2	4,8	19,0	....	20.16.50,28				51,05			20.16.57,55			B.
	Sirius.....	48,6	2,3	16,3	30,5	44,6	58,4	12,4	6.38.30,44				31,20	7,02					B.
	(k) ε Hydre.....	8,2	21,8	35,0	48,8	2,4	16,0	29,7	8.38.48,85				49,40	7,27					B.
Jan. 23	(l) ☉ 1 L.....	0,0	14,2	28,4	43,1	57,3	11,7	25,9	20.18.42,94				43,72		1,42	20.18.51,57			B.
	☉ 2 L.....	....	31,5	46,8	1,2	16,0	30,0	....	20.21.1,10				1,88			20.21.9,74			B.
	Aldebaran.....	35,2	49,1	3,0	17,2	31,1	45,2	59,2	4.27.17,14				17,68	8,28		4.27.26,01			B.
	Rigel.....	36,2	49,6	3,3	16,9	30,6	44,2	57,6	5.7.16,92				17,62	8,25		5.7.25,99			B.
	H. C. 9929.....	19,0	33,8	48,3	3,3	18,3	33,2	48,0	5.11.3,41				3,99			5.11.12,37			B.
	H. C. 10080.....	19,8	34,1	48,1	2,6	17,0	31,2	45,7	5.15.2,64				3,21			5.15.11,50			B.
	H. C. 10156.....	50,1	5,2	20,2	35,7	51,0	6,0	21,1	5.17.35,62				36,19			5.17.44,57			B.
	H. C. 10304.....	10,4	25,6	40,7	56,1	11,3	26,3	41,6	5.21.56,00				56,55			5.22.4,94			B.
	α Orionis.....	20,3	33,8	47,1	1,1	14,5	28,1	41,6	5.47.0,93				1,47	8,46		5.47.9,88			B.
	(m) Castor.....	12,9	28,8	44,2	0,6	16,5	32,3	48,1	7.25.0,48				1,00	8,59		7.25.9,51			B.
	Procyon.....	44,1	57,4	11,0	24,7	38,2	51,8	5,2	7.31.24,63				25,19	8,56		7.31.33,70			B.
Jan. 27	α Aquilæ.....	34,8	48,2	1,9	15,3	29,2	42,9	56,2	19.43.15,50		+1,3		16,04	15,71	1,60				B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

Jan. 21, 21<sup>h</sup>, Hardy was put forward 2<sup>m</sup>.

(a) Temp. 39°. (b) Very faint from cloud. (c) Just visible after wire III. (d) Very unsteady. (e) Clouds passing. (f) 'One of Mag. 9 north-following about 10<sup>s</sup>.' (g) Bad illumination of the field. (h) Great motion and bad definition. (i) A very high wind made the clock-beats indistinct. (k) The night was generally cloudy. (l) The clock's rate was probably accelerated by putting on the minute-hand. (m) Bad definition.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Jan. 28	⊙ 1 L..... ⊙ 2 L.....	44,5 1,9	58,4 16,0	12,7 30,0	26,9 44,4	.... 58,8	55,4 13,0	9,7 27,1	20. 39. 26,98 20. 41. 44,46	+0,9	+1,3	+6,4	27,74 45,22		1,60	20. 39. 43,51 20. 42. 0,99	B. B.		
Jan. 29	⊙ 1 L..... ⊙ 2 L..... (a) Aldebaran..... δ Ursæ Min. SP. (b) Sirius..... H. C. 13194..... 37 Geminorum.. B.A.C. 2280 .... Procyon..... Pollux.....	50,8 8,1 25,6 9,3 37,5 43,0 9,6 20,6 .... 11,2	4,9 22,1 39,4 55,5 51,5 58,0 24,4 34,2 48,1 26,5	19,0 36,1 53,3 40,0 5,3 12,8 39,2 48,1 1,3 41,7	33,1 50,7 7,8 27,8 19,6 27,9 54,1 2,6 15,2 57,1	47,8 4,9 21,3 20,5 33,6 43,1 9,3 16,6 28,7 12,3	1,8 19,0 35,4 2,5 47,4 57,9 24,1 30,3 42,1 27,6	16,0 33,1 49,6 50,5 1,6 12,8 39,1 44,6 .... 42,9	20. 43. 33,34 20. 45. 50,57 4. 27. 7,49 6. 19. 29,44 6. 38. 19,50 6. 43. 27,93 6. 45. 54,25 6. 51. 2,43 7. 31. 15,08 7. 35. 57,05				34,10 51,33 8,02 32,57 20,25 28,48 54,81 2,96 15,63 57,59		1,63	20. 43. 51,46 20. 46. 8,70 4. 27. 25,90 6. 38. 38,28 6. 43. 46,51 6. 46. 12,85 6. 51. 21,00 7. 31. 33,72 7. 36. 15,69	B. B. B. B. B. B. B. B. B. B.		
Jan. 30	α Ceti..... δ Arietis..... ξ Tauri..... H. C. 6525..... 9 Tauri..... B. (w.) III. 569.. 1 L..... B.A.C. 1186..... B. (w.) III. 884 .. (d) B. (w.) III. 959 .. γ Tauri..... δ <sup>1</sup> Tauri..... δ <sup>2</sup> Tauri..... Aldebaran..... Rigel..... α Orionis.....	32,0 7,1 8,0 34,8 12,0 1,5 30,0 52,7 42,0 35,8 20,3 21,9 32,0 23,8 24,9 9,1	45,3 21,3 21,8 48,7 26,8 15,1 44,5 7,0 55,6 49,9 34,3 35,9 45,9 37,7 38,3 22,7	58,4 35,4 35,0 2,6 41,1 29,0 58,3 21,8 9,6 3,3 48,1 49,8 59,6 51,6 52,0 36,1	12,3 50,1 49,1 17,0 10,3 43,1 12,8 36,6 23,8 18,0 2,3 4,1 14,0 6,0 5,5 49,8	25,8 4,2 2,8 30,9 25,0 57,0 41,0 5,9 37,7 31,8 16,3 18,1 .... 28,0 20,0 19,3 3,3	39,2 32,7 16,1 44,8 39,7 10,8 55,3 20,3 51,6 45,7 20,1 .... 42,0 33,8 46,3 30,4	52,7 32,7 29,8 58,8 39,7 24,6 55,3 20,3 5,4 59,7 44,1 .... .... 56,1 47,7 46,3 30,4	2. 54. 12,24 3. 2. 49,88 3. 18. 48,95 3. 24. 16,80 3. 27. 55,83 3. 30. 43,01 3. 34. 12,71 3. 40. 36,49 3. 45. 23,67 3. 49. 17,74 4. 11. 2,21 4. 14. 4,03 4. 15. 13,94 4. 27. 5,80 5. 7. 5,57 5. 46. 49,75				12,81 50,43 49,48 17,33 56,40 43,54 13,23 37,06 24,19 18,26 2,73 4,57 14,48 6,33 6,26 50,28	19,49	1,65	2. 54. 32,25 3. 3. 9,88 3. 19. 8,95 3. 24. 36,80 3. 28. 15,88 3. 31. 3,02 3. 34. 32,72 3. 40. 56,55 3. 45. 43,69 3. 49. 37,76 4. 11. 22,26 4. 14. 24,10 4. 15. 34,01 4. 27. 25,88 5. 7. 25,85 5. 47. 9,92	B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B.		
Jan. 31	(e) 1 L.....	....	57,3	11,5	26,2	41,1	55,2	....	4. 26. 26,26				26,81			4. 26. 47,82	T.		
Feb. 2	(f) 1 L.....	56,7	11,3	25,7	....	....	11,1	26,1	6. 21. 41,19		+0,4		41,70		1,56	6. 22. 6,34	B.		
Feb. 3.	(g) ⊙ 1 L..... ⊙ 2 L..... α Andromedæ... α Ceti..... H. C. 8434..... H. C. 8541..... Aldebaran..... Sirius..... 51 Geminorum.. H. C. 14108..... δ Geminorum <i>nf</i> . (h) H. C. 14393..... (i) H. C. 14495..... H. C. 14637..... (k) 1 L..... Procyon..... Pollux..... (l) φ Geminorum ...	9,8 26,0 31,0 25,2 18,2 13,1 17,2 29,3 44,0 23,1 7,1 41,1 49,0 37,9 4,8 26,3 .... 14,2	23,9 40,0 46,3 38,7 33,0 27,3 31,1 43,2 58,0 37,7 21,7 55,9 3,6 52,1 19,6 40,0 .... 29,6	37,8 54,0 1,6 52,1 47,3 41,2 45,2 57,1 11,8 51,9 35,9 10,0 24,6 18,0 34,0 53,2 33,5 44,3	51,9 8,1 17,0 5,9 2,1 56,0 59,2 11,2 26,0 6,3 50,8 24,6 33,0 .... 49,4 7,3 4,4 59,9	6,0 22,2 32,0 19,3 17,0 10,0 13,3 25,3 40,1 21,0 5,2 39,0 47,4 35,9 4,2 20,7 4,4 15,0	20,0 36,2 3,0 32,8 31,4 24,1 27,2 39,3 54,0 35,2 19,8 53,1 2,2 .... 34,2 34,9 30,0	34,1 50,3 .... 46,2 46,0 38,2 41,2 53,1 8,1 49,6 34,1 7,6 16,6 21,15 34,2 47,6 34,9 45,2	21. 3. 51,93 21. 6. 8,12 0. 0. 16,95 2. 54. 5,74 4. 21. 2,14 4. 23. 55,70 4. 26. 59,20 6. 38. 11,21 7. 4. 26,00 7. 8. 6,40 7. 10. 50,65 7. 16. 24,47 7. 19. 32,83 7. 23. 21,15 7. 23. 49,36 7. 31. 7,03 7. 35. 49,01 7. 43. 59,75				52,67 8,86 17,42 6,27 2,65 56,20 59,68 11,94 26,48 6,91 51,16 24,97 33,34 21,66 49,87 7,54 49,48 60,24			21. 4. 18,26 21. 6. 34,46 0. 0. 43,20 2. 54. 32,24 4. 21. 28,71 4. 24. 22,27 4. 27. 25,75 6. 38. 38,15 7. 4. 52,72 7. 8. 33,15 7. 11. 17,41 7. 16. 51,22 7. 19. 59,59 7. 23. 47,92 7. 24. 16,13 7. 31. 33,81 7. 36. 15,75 7. 44. 26,52	B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B.		
Feb. 4	(m)(n) Castor..... Procyon..... Pollux..... (m) φ Geminorum...	53,8 25,2 1,7 13,1	9,7 38,3 17,1 28,1	25,3 51,9 32,0 43,1	41,3 5,3 47,3 58,3	57,3 19,2 2,8 13,2	13,1 32,3 18,0 28,6	29,2 46,0 33,2 43,7	7. 24. 41,38 7. 31. 5,46 7. 35. 47,45 7. 43. 58,30				41,82 5,97 47,92 58,79	27,79 27,79 27,83	1,43	7. 25. 9,63 7. 31. 33,79 7. 36. 15,74 7. 44. 26,62	B. B. B. B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

(a) The evening had been cloudy. (b) Indefinite. (c) 'The south-following of two about 14" apart.' (d) Near the Moon. (e) Dense cloud. Correction applied for difference of personal equation =  $-0^s,19$ . See Introduction. (f) Clouds and high wind. (g) Bad definition. (h) 'The south-preceding and brighter of a double-star.' The other is H. C. 14394. (i) 'A brighter followed, and another a little lower in the field preceded.' (k) Unsteady. (l) Clouds passing. (m) Cloudy. (n) Wind and tempest made the clock nearly inaudible.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.		
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.						
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.
Feb. 4	δ 1 L. ....	28,6	43,2	57,8	12,9	27,8	42,7	57,3	8.27.12,90	+0,9	+0,4	+6,4	13,40		1,43	8.27.41,28		
	δ Cancri. ....	5,9	20,0	34,0	48,4	2,7	16,8	51,0	8.35.48,40				48,90			8.36.16,78		
	(a) ε Hydræ. ....	47,9	1,1	14,7	28,4	42,0	55,4	9,1	8.38.28,37				28,87	27,91		8.38.56,76		
Feb. 5	Procyon. ....	23,7	37,2	50,3	4,2	17,7	31,2	44,7	7.31.4,14			+6,8	4,67	29,09	1,36	7.31.33,81		
	Pollux. ....	0,1	15,4	30,5	46,1	1,6	16,8	32,1	7.35.46,09				46,58	29,17		7.36.15,72		
	(b) δ Cancri. ....				47,2	1,1	15,5	29,4	8.35.46,98				47,49			8.36.16,69		
	α Hydræ. ....	9,1	22,4	35,9	49,8	3,4	16,8	30,3	9.19.49,68				50,36	29,24		9.20.19,60		
	λ Leonis. ....	2,9	17,6	32,0	47,0	1,7	16,0	31,0	9.22.46,89				47,41			9.23.16,65		
	(c) δ 2 L. ....	52,1	6,7	21,0	35,8	50,1	4,7	19,1	9.32.35,64				36,15			9.33.5,40		
	(d) α Aquilæ. ....			47,9	1,8	15,2	28,9	42,3	19.43.1,63				2,14	29,75	1,45	19.43.31,96		
Feb. 6	H. C. 7434. ....	17,0	31,2	45,7	0,3	15,0	29,4	44,0	3.53.0,37				0,89			3.53.31,21		
	H. C. 7500. ....		59,0	13,3	28,7	43,8	58,3		3.55.28,52				29,04			3.55.59,36		
	H. C. 7661. ....	45,2	0,0	14,2	29,3	44,0	58,6	13,1	3.59.29,20				29,73			4.0.0,05		
	H. C. 7759. ....	42,0	57,1	11,7	26,3	41,7	56,2	11,1	4.2.25,59				26,12			4.2.56,44		
	(e) B. (w.) iv. 86. ....	59,1	13,3	27,0	41,1	55,0	8,6	22,6	4.4.40,95				41,45			4.5.11,78		
	H. C. 7999. ....	11,2	25,7	40,1	55,0	9,6	24,0	38,7	4.8.54,90				55,43			4.9.25,76		
	H. C. 8122. ....	37,2	51,2	5,3	19,9	34,0	48,0	2,0	4.12.19,66				20,17			4.12.50,50		
	H. C. 8249. ....	38,7	52,8	6,7	21,0	35,0	49,0	3,1	4.15.20,90				21,41			4.15.51,75		
	B.A.C. 1373. ....	59,4	14,0	28,1	43,0	57,4	11,8	26,1	4.18.42,83				43,35			4.19.13,69		
	H. C. 8546. ....	17,0	31,7	46,2	1,0	16,0	30,3	45,1	4.24.1,04				1,56			4.24.31,91		
	H. C. 8654. ....	40,8	55,1	9,1	23,7	38,0	52,0	6,2	4.27.23,56				24,08			4.27.54,43		
	σ <sup>3</sup> Tauri. ....		49,8	3,4	17,9	31,9	45,9		4.30.17,78				18,27			4.30.48,62		
	H. C. 8826. ....	29,8	43,6	57,2	11,7	25,6	39,4	53,3	4.33.11,51				12,00			4.33.42,36		
	H. C. 8917. ....	50,9	5,8	20,3	35,6	50,6	5,4	20,4	4.36.35,57				36,09			4.37.6,45		
	H. C. 9008. ....	42,1	56,7	11,0	25,4	40,1	54,2	9,1	4.39.25,52				26,04			4.39.56,40		
	H. C. 9136. ....	23,8	38,2	52,9	7,7	22,1	37,0	51,3	4.44.7,57				8,10			4.44.38,47		
	H. C. 9250. ....	10,2	25,4	40,6	55,9	11,1	26,1	41,1	4.47.55,77				56,27			4.48.26,64		
	H. C. 9411. ....	40,1	53,9	7,5	21,7	35,8	49,7	3,7	4.52.21,80				22,29			4.52.52,67		
	H. C. 9517. ....	59,2	13,1	27,1	41,8	56,0	10,0	23,8	4.55.41,57				42,08			4.56.12,46		
	B.A.C. 1577. ....	1,1	16,2	31,2	46,9	2,2	17,1	32,7	4.58.46,77				47,26			4.59.17,64		
	Rigel. ....	13,8	27,4	41,0	54,8	8,3	22,0	35,5	5.6.54,69				55,38	30,34		5.7.25,77		
	β Tauri. ....	39,6	54,8	10,0	25,6	40,9	56,0	11,4	5.16.25,47				25,95	30,51		5.16.56,35		
	Sirius. ....	24,8	39,0	52,8	7,1	21,2	35,2	49,1	6.38.7,03				7,79	30,34		6.38.38,27		
	Castor. ....	51,1	6,8	22,5	38,8	54,5	10,3	26,1	7.24.38,59				39,04	30,57		7.25.9,56		
	Regulus. ....	17,3	31,1	44,6	58,4	12,4	26,1	39,6	9.59.58,50				58,99	30,74		10.0.29,67		
	γ Leonis np. ....	34,3	49,0	3,1	17,6	32,1	46,6	1,0	10.11.17,67				18,18			10.11.48,88		
	δ 2 L. ....	9,4	23,3	37,7	52,0	6,2	20,2	34,4	10.33.51,88				52,37			10.34.23,09		
	α Aquilæ. ....	19,2	32,7	46,1	0,0	13,9	27,1	40,9	19.42.59,98				60,49	31,41	1,60			
Feb. 7	⊙ 1 L. ....				52,8	7,0	20,4	34,4	21.19.52,63				53,38			21.20.24,89		
	⊙ 2 L. ....	25,8	39,7	53,4	7,8	21,9	35,7	49,8	21.22.7,73				8,48			21.22.40,00		
Feb. 9	(f) α Orionis. ....		7,7	20,8	34,6	48,3	1,7		5.46.34,62			+0,2	35,12	34,68	1,50			
	Castor. ....	46,4	2,2	18,1	34,2	50,2	6,0	22,1	7.24.34,17				34,61	34,99				
Feb. 10	Aldebaran. ....	7,1	21,2	34,8	49,3	3,2	17,2	31,2	4.26.49,15				49,63	36,10	1,45	4.27.25,87		
	β Tauri. ....			4,1	19,4	34,8	50,2	5,3	5.16.19,47				19,93	36,48		5.16.56,22		
	H. C. 10889. ....	56,2	10,6	25,2	40,0	54,2	8,7	23,2	5.37.39,72				40,23			5.38.16,54		
	(g) H. C. 11036. ....	33,8	48,7	3,3	18,2	33,2	48,0	3,1	5.41.18,33				18,84			5.41.55,15		
	(g) H. C. 11081. ....	9,1	23,3	38,2	53,1	8,0	22,7	37,7	5.42.53,15				53,66			5.43.29,97		
	H. C. 11152. ....		14,8	29,8	45,2	0,3	15,6		5.45.45,14				45,61			5.46.21,93		
	H. C. 11251. ....	16,2	30,8	45,1	59,8	14,3	28,7	43,0	5.48.59,70				60,21			5.49.36,53		
	H. C. 11363. ....	12,0	26,0	39,9	54,1	8,1	22,0	36,1	5.51.54,03				54,53			5.52.30,85		
	H. C. 11384. ....	46,0	0,0	13,9	28,5	42,2	56,2	10,3	5.52.28,16				28,66			5.53.4,99		
	H. C. 11539. ....	27,7	42,0	56,1	10,4	24,8	38,8	53,0	5.57.10,40				10,90			5.57.47,23		
	Castor. ....	44,7	1,1	16,7	32,8	48,8	4,7	20,4	7.24.32,74				33,18	36,42		7.25.9,60		
	Procyon. ....	16,0	29,7	43,0	57,0	10,3	23,8	37,2	7.30.56,72				57,24	36,51		7.31.33,66		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>,317, -26<sup>s</sup>,873, -13<sup>s</sup>,601, +0<sup>s</sup>,041, +13<sup>s</sup>,535, +26<sup>s</sup>,886, +40<sup>s</sup>,328.

(a) Cloudy. (b) Hid by cloud before wire IV. (c) Very faint at times from cloud. (d) Very faint. (e) 'Another precedes by about 15<sup>s</sup>'.  
(f) Blazing. (g) The noted times have been diminished 1<sup>m</sup> from other observations of the same stars.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Asimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Feb. 10	Pollux .....	53,2	8,3	23,4	38,7	54,2	9,2	24,8	7.35.38,83	+0,9	+0,2	+6,8	39,30	36,44	1,45	7.36.15,73			B.
	Regulus .....	11,7	25,2	39,0	53,0	6,7	20,4	34,2	9.59.52,88				53,36	36,42		10.0.29,93			B.
	α Aquilæ.....	13,3	27,2	40,6	54,6	8,0	21,7	35,1	19.42.54,36				54,86	37,11	1,41	19.43.31,97			B.
Feb. 11	⊙ 1 L.....	58,7	12,6	26,3	40,7	54,4	8,4	22,3	21.35.40,48				41,22			21.36.18,44			B.
	⊙ 2 L.....	12,9	27,1	40,8	55,2	8,7	22,7	36,5	21.37.54,84				55,58			21.38.32,81			B.
	δ Ursæ Min. SP. ....	....	....	....	9,4	0,4	....	31,2	6.19.11,19				15,54						
	82 Geminorum..	20,7	35,2	49,8	4,9	19,6	33,9	48,7	7.39.4,68				5,20			7.39.43,01			B.
	H. C. 15231.....	....	2,2	17,1	32,6	47,8	2,7	....	7.41.32,48				32,97			7.42.10,78			B.
	H. C. 15398.....	3,2	17,1	31,3	45,8	0,0	14,0	28,2	7.45.45,66				46,16			7.46.23,98			B.
	H. C. 15528.....	50,8	5,1	19,2	34,1	48,7	3,1	17,5	7.49.34,07				34,58			7.50.12,40			B.
	ε Hydræ.....	37,9	51,2	4,8	18,4	32,1	45,4	59,0	8.38.18,40				18,91	37,89		8.38.56,78			B.
	α Hydræ.....	....	....	....	41,2	54,8	8,2	21,9	9.19.41,12				41,79	37,85		9.20.19,70			B.
	Regulus.....	10,0	23,6	37,3	51,4	5,2	19,2	32,7	9.59.51,34				51,82	37,97		10.0.29,77			B.
Feb. 12	⊙ 1 L.....	....	....	21,2	35,7	49,6	3,3	17,3	21.39.35,54				36,27		1,47	21.40.14,96			B.
	⊙ 2 L.....	7,8	21,8	35,5	49,7	3,8	17,4	31,2	21.41.49,60				50,33			21.42.29,02			B.
	Aldebaran.....	4,0	18,2	32,1	46,1	0,2	14,2	28,0	4.26.46,12				46,60	39,10					B.
Feb. 17	(a)(b) Sirius.....	7,1	21,2	35,2	49,6	....	....	31,3	6.37.49,31			+0,3	50,06	47,96	1,34				T.
	(c) γ Aquilæ.....	....	....	8,7	22,4	36,5	50,1	3,6	19.38.22,60				23,08	48,76	1,51	19.39.11,72			T.
	α Aquilæ.....	2,1	15,6	29,1	43,1	56,8	10,1	23,6	19.42.42,91				43,42	48,69		19.43.32,06			T.
Feb. 18	(a)(d) ⊙ 1 L.....	7,2	21,2	35,1	49,2	....	....	....	22.2.48,85				49,56			22.3.38,35			T.
	⊙ 2 L.....	20,6	34,5	48,1	2,0	....	29,2	43,3	22.5.1,93				2,64			22.5.51,43			T.
	α Pegasi.....	....	....	....	32,8	....	0,2	14,1	22.56.32,55				33,03	48,71		22.57.21,88			T.
	(e) ε Hydræ.....	26,2	39,7	53,2	7,0	20,6	33,9	47,5	8.38.6,87				7,38	49,42		8.38.56,83			T.
	(e) α Hydræ.....	....	....	15,7	29,7	43,2	56,7	10,3	9.19.29,55				30,22	49,44		9.20.19,72			T.
	(f) Regulus.....	58,6	12,2	25,7	40,0	53,6	7,4	21,2	9.59.39,81				40,30	49,55		10.0.29,84			T.
	α Aquilæ.....	0,3	14,4	27,7	41,2	55,8	8,7	22,1	19.42.41,45				41,96	50,17	1,53	19.43.32,15			T.
Feb. 19	(g) Castor.....	30,2	46,0	1,8	....	34,1	50,0	5,9	7.24.18,01				18,46	51,08		7.25.9,39			T.
	Procyon.....	1,7	15,2	28,6	42,4	55,9	9,5	23,0	7.30.42,33				42,86	50,83		7.31.33,80			T.
	(h) Pollux.....	38,2	53,7	8,8	24,5	39,7	54,8	10,2	7.35.24,27				24,75	50,94		7.36.15,69			T.
	ε Hydræ.....	24,6	38,2	51,7	5,3	18,9	32,3	46,0	8.38.5,29				5,80	51,00		8.38.56,81			T.
	α Aquilæ.....	59,3	12,8	26,4	40,1	53,8	7,1	20,9	19.42.40,05				40,56	51,59	1,60	19.43.32,23			T.
Feb. 20	(i) ⊙ 1 L.....	....	....	14,3	28,2	42,2	56,0	9,6	22.10.28,33				29,04			22.11.20,88			T.
	⊙ 2 L.....	59,4	13,2	27,0	40,9	54,7	8,3	22,2	22.12.40,81				41,52			22.13.33,36			T.
	Aldebaran.....	51,0	4,8	18,7	32,9	46,9	0,8	14,6	4.26.32,81				33,30	52,27		4.27.25,56			T.
	β Tauri.....	17,4	32,8	47,9	3,7	18,8	34,0	49,2	5.16.3,40				3,87	52,38		5.16.56,18			T.
	γ Aquilæ.....	37,2	50,8	4,3	18,1	31,8	45,4	59,0	19.38.18,09				18,57	53,33	1,73	19.39.11,89			T.
	α Aquilæ.....	57,4	11,1	24,6	38,4	52,0	5,4	19,0	19.42.38,27				38,78	53,39		19.43.32,11			T.
Feb. 21	(k) ⊙ 1 L.....	35,6	49,1	2,9	16,9	30,4	44,2	57,9	22.14.16,72				17,42			22.15.10,94			T.
	⊙ 2 L.....	47,8	1,6	15,1	29,0	42,8	56,4	10,1	22.16.28,98				29,68			22.17.23,20			T.
	Castor.....	27,2	43,2	58,8	14,9	30,9	46,8	2,7	7.24.14,93				15,38	54,14		7.25.9,55			T.
	Procyon.....	58,6	12,0	25,3	39,0	52,4	6,1	19,5	7.30.38,99				39,52	54,15		7.31.33,70			T.
	Pollux.....	35,3	50,4	5,4	21,2	36,4	51,4	6,8	7.35.20,98				21,46	54,21		7.36.15,65			T.
	ε Hydræ.....	21,6	35,0	48,3	2,1	15,6	29,2	42,6	8.38.2,05				2,56	54,24		8.38.56,82			T.
Feb. 23	α Aquilæ.....	....	....	19,4	33,0	46,6	0,1	13,6	19.42.32,95			+8,2	33,52	58,72	1,79	19.43.32,29			T.
Feb. 24	(l) ⊙ 1 L.....	56,6	10,1	23,7	37,7	51,3	5,0	18,6	22.25.37,57				38,34			22.26.37,31			T.
	⊙ 2 L.....	8,1	21,9	35,6	49,3	3,0	16,4	30,4	22.27.49,25				50,02			22.28.49,00			T.
	α Andromedæ...	....	12,8	27,9	43,3	58,6	13,8	....	23.59.43,28				43,80	59,24		0.0.42,89			T.
	α Ceti.....	51,5	5,2	18,5	32,2	45,8	59,1	12,4	2.53.32,10				32,71	59,22		2.54.32,02			T.
Feb. 25	(m)(n) ⊙ 1 L.....	42,3	56,1	9,8	23,3	....	51,0	4,4	22.29.23,44				24,20			22.30.24,97			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.

(a) Clouds. (b) Flaring, and sometimes scarcely visible. (c) Extremely faint: not seen before. (d) Excessive motion. (e) Unsteadiness.  
 (f) Wires V, VI, VII have each been increased 1" from a consideration of the intervals. (g) Barely visible. (h) Times increased by 30". (i) The noted times were 10" later. (k) So unsteady that the observation was quite uncertain. (l) Motion. (m) Cloudy. (n) Too unsteady for satisfactory observation.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h. m. s.	
Feb. 26	(a) $\alpha$ Orionis.....	25,6	39,0	52,3	6,2	19,7	33,3	46,5	5. 46. 6,09	+0,9	+0,3	+8,2	6,66	62,90	1,78		T.
	Sirius.....	....	....	....	34,2	48,2	2,2	16,1	6. 37. 34,11				34,95	62,93			T.
Feb. 27	(a)(b) $\odot$ 2 L.....	23,2	36,4	....	....	17,6	....	....	22. 39. 3,86				4,63		1,82	22. 40. 8,98	B.
	(a)(c) $\odot$ 1 L.....	....	48,1	2,3	17,0	31,2	45,6	....	4. 3. 16,84				17,40			4. 4. 21,99	T.
	(d) Aldebaran.....	38,1	52,0	5,8	20,2	34,2	48,2	2,2	4. 26. 20,10				20,65	64,79			B.
Feb. 28	(a) $\odot$ 1 L.....	30,0	44,6	59,0	14,1	28,7	43,3	57,9	4. 56. 13,94				14,50		1,83	4. 57. 21,20	B.
	(e) Sirius.....	48,1	2,3	16,3	30,4	44,3	58,4	12,3	6. 37. 30,30				31,14	66,71		6. 38. 37,97	B.
	Pollux.....	22,3	37,6	52,7	8,3	23,6	38,7	53,9	7. 35. 8,16				8,68	66,92		7. 36. 15,58	B.
	82 Geminorum..	51,3	6,0	20,4	35,4	50,0	4,7	19,2	7. 38. 35,30				35,87			7. 39. 42,77	B.
	H. C. 15231.....	....	33,1	47,9	3,2	18,2	33,2	....	7. 41. 3,12				3,66			7. 42. 10,57	B.
	H. C. 15325.....	48,4	3,6	18,3	34,0	49,0	4,0	19,1	7. 43. 33,77				34,31			7. 44. 41,22	B.
	H. C. 15528.....	21,3	35,8	50,2	4,8	19,2	33,7	48,2	7. 49. 4,74				5,31			7. 50. 12,22	B.
	7 Cancri.....	15,2	29,3	44,2	59,0	13,6	28,1	42,5	7. 53. 58,85				59,42			7. 55. 6,34	B.
	(f) H. C. 15834.....	48,2	2,1	16,0	30,1	44,0	58,0	12,1	7. 57. 30,07				30,62			7. 58. 37,55	B.
	H. C. 15954.....	....	38,3	52,5	7,2	21,7	35,9	....	8. 1. 7,12				7,69			8. 2. 14,62	B.
	(a) $\epsilon$ Hydræ.....	8,4	22,2	35,3	49,3	2,7	16,3	29,7	8. 37. 49,13				49,71	67,06		8. 38. 56,69	B.
Feb. 29	$\alpha$ Aquilæ.....	....	....	....	....	36,0	49,3	3,0	19. 42. 22,21				22,78	69,59	1,77		B.
Mar. 2	128 Tauri.....	27,1	40,9	54,9	9,2	23,1	37,2	51,1	5. 35. 9,08		+0,3		9,63		1,62	5. 36. 21,70	B.
	H. C. 10917.....	34,1	49,1	4,2	19,6	34,9	49,9	5,1	5. 38. 19,56				20,10			5. 39. 32,17	B.
	H. C. 11036.....	....	12,2	26,8	42,1	56,9	11,8	....	5. 40. 41,96				42,53			5. 41. 54,60	B.
	(g) B.A.C. 1867.....	35,6	50,0	4,1	18,5	33,0	47,1	1,7	5. 43. 18,58				19,15			5. 44. 31,22	B.
	$\alpha$ Orionis.....	16,2	29,7	43,2	57,1	10,4	23,9	37,6	5. 45. 56,87				57,44	72,04		5. 47. 9,52	B.
	(h) 51 Geminorum..	....	....	25,7	40,1	54,1	7,8	21,9	7. 3. 39,91				40,46			7. 4. 52,63	B.
	(i) H. C. 14108.....	....	....	5,7	20,1	34,7	48,9	3,2	7. 7. 20,13				20,70			7. 8. 32,87	B.
	$\delta$ Geminorum. <i>nf</i> ..	20,6	35,2	49,8	4,3	18,6	33,2	48,1	7. 10. 4,26				4,83			7. 11. 17,00	B.
	H. C. 14321.....	42,0	56,3	10,8	25,3	39,8	54,1	8,7	7. 13. 25,29				25,86			7. 14. 38,04	B.
	(k) H. C. 14393.....	....	9,4	23,7	36,3	53,0	7,1	....	7. 15. 38,30				38,87			7. 16. 51,05	B.
	H. C. 14556.....	....	0,0	14,2	28,8	43,2	57,3	....	7. 20. 28,70				29,26			7. 21. 41,44	B.
	Castor.....	9,1	25,0	40,6	56,7	12,7	28,5	44,2	7. 23. 56,69				57,17	72,22		7. 25. 9,36	B.
	B.A.C. 2514.....	18,2	33,1	47,8	3,0	17,8	32,2	46,8	7. 29. 2,70				3,26			7. 30. 15,46	B.
	(l) * N.P.D. 71°. 36'	13,2	27,9	41,9	56,2	10,0	24,1	38,6	7. 31. 55,99				56,56			7. 33. 8,76	B.
	Pollux.....	17,0	32,1	47,3	3,0	18,1	33,2	48,5	7. 35. 2,74				3,26	72,31		7. 36. 15,46	B.
	$\odot$ 1 L.....	51,7	6,7	21,3	36,5	51,3	6,1	21,0	7. 53. 36,37				36,94			7. 54. 49,16	B.
	$\delta$ Cancri.....	21,2	35,7	49,6	4,1	18,1	32,1	46,6	8. 35. 3,91				4,47			8. 36. 16,74	B.
	$\epsilon$ Hydræ.....	3,2	16,8	30,1	43,9	57,7	11,1	24,4	8. 37. 43,89				44,47	72,28		8. 38. 56,74	B.
	$\alpha$ Cancri.....	29,8	43,7	57,1	11,1	25,2	38,7	52,6	8. 49. 11,17				11,72			8. 50. 24,00	B.
	Regulus.....	35,7	49,5	3,1	17,2	31,0	44,3	58,3	9. 59. 17,02				17,57	72,33		10. 0. 29,93	B.
	$\delta$ Leonis.....	18,3	32,9	47,2	1,9	16,3	30,7	45,2	11. 5. 1,78				2,35	72,40		11. 6. 14,79	B.
Mar. 3	(m) $\odot$ 1 L.....	....	....	....	27,8	41,3	54,9	8,4	22. 55. 27,72				28,47		1,62	22. 56. 41,64	B.
	$\odot$ 2 L.....	57,4	11,2	24,2	....	....	....	....	22. 57. 38,11				38,86			22. 58. 52,04	B.
	(n) Pollux.....	15,3	30,6	45,8	1,3	16,7	31,8	47,1	7. 35. 1,23				1,75	73,80		7. 36. 15,51	B.
	$\delta$ Cancri.....	19,7	33,8	48,0	2,3	16,8	30,7	45,1	8. 35. 2,34				2,90			8. 36. 16,73	B.
	$\epsilon$ Hydræ.....	1,7	15,2	28,6	42,3	55,9	9,2	23,0	8. 37. 42,27				42,85	73,89		8. 38. 56,68	B.
	$\alpha$ Cancri.....	....	....	55,7	9,7	23,3	37,2	51,0	8. 49. 9,62				10,17			8. 50. 24,01	B.
	$\odot$ 1 L.....	27,1	41,7	56,0	11,2	25,8	40,2	55,1	8. 56. 11,01				11,57			8. 57. 25,42	B.
	$\alpha$ Hydræ.....	24,3	38,0	51,2	5,3	18,7	32,3	45,8	9. 19. 5,09				5,85	73,79		9. 20. 19,73	B.
	$\xi$ Leonis.....	2,9	16,7	30,2	44,0	58,0	11,8	25,4	9. 22. 44,14				44,69			9. 23. 58,57	B.
	$\sigma$ Leonis.....	20,1	33,9	47,0	1,1	14,8	28,2	42,1	9. 32. 1,03				1,58			9. 33. 15,47	B.
	Regulus.....	34,0	47,7	1,3	15,3	29,1	43,2	56,8	9. 59. 15,34				15,89	74,01		10. 0. 29,81	B.
	B. (w.) x. 110 ...	4,9	18,2	21,7	45,3	59,0	12,3	26,0	10. 5. 45,34				45,93			10. 6. 59,86	B.
	B. (w.) x. 161 ...	5,9	19,3	32,9	46,8	0,0	13,9	27,2	10. 8. 46,57				47,14			10. 10. 1,08	B.
	B. (w.) x. 169 ...	29,1	43,1	56,3	10,0	23,9	37,3	51,1	10. 9. 10,11				10,68			10. 10. 24,62	B.
	H. C. 20080.....	42,2	55,9	9,5	23,7	37,2	51,0	4,9	10. 12. 23,48				24,03			10. 13. 37,97	B.
	H. C. 20183.....	11,6	25,2	38,9	....	6,6	....	34,0	10. 15. 52,76				53,31			10. 17. 7,25	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

(a) Cloudy. (b) Without the dark glass. (c) Reduced with the rate 1,82 from T's observations of Feb. 26. (d) The rest of the night cloudy.  
 (e) The counting was 22<sup>s</sup> in excess. (f) 'Another south following.' (g) 'One lower in the field of Mag. 9 precedes by about 15<sup>s</sup>.' (h) Bad definition.  
 (i) Wire IV has been increased 1<sup>s</sup> from the intervals. (k) 'The south-preceding star.' (l) Another precedes by about 25<sup>s</sup>. (m) Very cloudy.  
 Wire V of 2 L. was written down 45,1, which being quite discordant is rejected. (n) Cloudy. Till this time the evening had been overcast.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"					
Mar. 3	(a) B. (w.) x. 297 ... B. (w.) x. 354 ... B. (w.) x. 422 ... (b) B. (w.) x. 474 ... β Leonis..... (c) Egeria.....	.... 28,1 15,2 6,4 35,1 53,3	54,0 41,8 28,7 20,3 48,8 8,3	.... 41,8 42,0 34,0 2,6 23,4	21,2 55,6 55,7 48,0 16,8 38,8	.... 9,2 9,4 2,0 30,9 53,8	49,0 22,3 23,1 15,2 44,4 7,7	2,8 .... 36,2 29,2 58,7 23,0	10. 16. 21,43 10. 18. 55,40 10. 22. 55,76 10. 25. 47,87 11. 40. 16,76 12. 5. 38,33	+0,9 +0,3 +8,2		21,98 55,96 56,35 48,42 17,29 38,90		1,62	10. 17. 35,92 10. 20. 9,91 10. 24. 10,30 10. 27. 2,37 11. 41. 31,33 12. 6. 52,97	B. B. B. B. B. B.	
Mar. 4	⊙ 1 L..... ⊙ 2 L..... α Orionis..... B.A.C. 2514..... * N.P.D. 71°. 38' H. C. 15112..... H. C. 15231..... H. C. 15398..... 7 Cancri..... α Hydræ..... ξ Leonis..... ο Leonis..... (d) 1 L..... 37 Leonis..... 42 Leonis..... δ Leonis..... β Leonis..... Egeria.....	28,2 38,3 .... 15,0 57,8 40,0 9,1 25,1 .... 22,7 1,2 18,5 39,6 47,0 55,3 15,3 33,0 52,2	41,7 51,8 39,8 29,8 11,8 54,6 24,0 39,2 35,1 36,3 15,0 32,0 53,9 0,5 9,2 29,6 47,2 6,8	55,1 5,4 39,8 44,2 25,7 9,2 39,2 50,2 49,6 28,6 45,8 8,2 14,2 23,0 43,9 0,9 21,4	8,8 19,1 53,2 59,3 40,2 24,2 54,5 7,8 4,8 3,3 42,6 59,6 22,7 28,6 51,2 13,1 29,1 36,3	22,4 32,7 7,3 14,1 54,2 38,8 9,6 22,0 4,8 16,8 56,3 13,3 37,2 42,3 51,2 27,2 41,8 57,0 5,0	36,2 46,2 20,8 29,0 8,2 53,1 24,3 39,8 .... 30,8 10,2 27,0 51,3 5,9 56,2 10,2 5,0 41,8 57,0 19,9	22. 59. 8,83 23. 1. 19,08 5. 45. 53,49 7. 28. 59,32 7. 32. 40,10 7. 37. 23,98 7. 40. 54,35 7. 45. 7,66 7. 53. 49,86 9. 19. 3,37 9. 22. 42,54 9. 31. 59,55 9. 58. 22,68 10. 7. 28,43 10. 12. 37,14 11. 4. 58,50 11. 40. 15,04 12. 4. 36,04			9,58 19,83 54,06 59,88 40,66 24,54 54,89 8,22 50,43 4,13 43,09 60,10 23,22 28,98 37,69 59,07 15,57 36,61		1,79	23. 0. 24,37 23. 2. 34,62 5. 47. 9,35 7. 30. 15,30 7. 33. 56,09 7. 38. 39,97 7. 42. 10,32 7. 46. 23,66 7. 55. 5,88 9. 20. 19,68 9. 23. 58,65 9. 33. 15,67 9. 59. 38,83 10. 8. 44,59 10. 13. 53,31 11. 6. 14,76 11. 41. 31,30 12. 5. 52,37	B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B.		
Mar. 5	⊙ 1 L..... ⊙ 2 L..... (e) H. C. 12158..... (e) H. C. 12291..... (f) δ Ursæ Min. SP. H. C. 12454..... H. C. 12557..... H. C. 12716..... Sirius..... Castor..... Procyon..... α Hydræ..... 37 Leonis..... 42 Leonis..... 1 L..... (g) 2 L..... ν Virginis..... β Leonis..... π Virginis..... (h) Egeria.....	8,7 19,1 .... 18,8 17,8 46,8 55,8 24,7 37,8 3,9 35,2 20,8 45,0 53,2 36,7 58,0 17,0 31,2 19,0 48,3	22,2 32,3 45,3 33,0 4,7 1,0 10,6 39,4 51,7 19,8 48,6 34,2 58,8 53,2 50,6 12,1 30,3 45,2 32,8 ....	35,7 45,9 0,7 46,8 50,3 14,9 25,1 54,0 5,4 35,4 1,8 47,7 12,3 7,1 4,5 26,1 43,9 58,8 46,1 ....	49,3 59,8 15,3 1,0 36,4 29,0 40,2 9,1 19,8 7,6 15,7 15,2 26,5 35,0 18,8 40,2 57,7 13,2 0,0 ....	3,1 13,2 .... 15,1 .... .... 55,0 23,9 33,8 23,4 42,7 28,7 40,3 49,1 33,0 54,3 11,2 41,0 27,1 ....	16,7 26,7 .... 29,0 10,8 57,2 11,4 1,8 39,1 56,2 42,0 8,1 3,2 1,0 8,2 24,7 55,0 40,4 ....	23. 2. 49,42 23. 4. 59,59 6. 13. 15,09 6. 17. 0,97 6. 18. 37,54 6. 21. 29,09 6. 24. 40,18 6. 29. 9,02 6. 37. 19,72 7. 23. 51,51 7. 30. 15,63 9. 19. 1,44 10. 7. 26,46 10. 12. 35,10 10. 59. 18,79 11. 1. 40,20 11. 36. 57,57 11. 40. 13,07 11. 51. 59,80 12. 3. 32,53			50,17 60,34 15,66 1,53 42,85 29,65 40,75 9,59 20,56 52,00 16,23 2,20 27,01 35,65 19,34 40,75 58,15 13,60 60,38 33,10		1,87	23. 4. 6,83 23. 6. 17,00 6. 14. 32,87 6. 18. 18,75 .... 6. 22. 46,88 6. 25. 57,98 6. 30. 26,83 6. 38. 37,80 7. 25. 9,31 7. 31. 33,54 9. 20. 19,66 10. 8. 44,53 10. 13. 53,18 11. 0. 36,93 11. 2. 58,34 11. 38. 15,79 11. 41. 31,24 11. 53. 18,04 12. 4. 50,77	B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B. B.		
Mar. 6	⊙ 2 L..... Sirius..... Regulus..... δ Leonis..... π Virginis..... 2 L.....	.... .... 28,7 .... 17,2 23,8	13,2 3,6 42,3 40,2 30,9 37,7	26,2 17,8 56,0 54,7 44,3 51,3	40,3 32,0 10,2 9,3 58,2 5,2	53,9 45,8 23,9 23,6 25,2 33,2	7,3 0,2 51,3 38,1 38,7 47,1	23. 8. 40,18 6. 37. 17,89 9. 59. 9,95 11. 4. 54,75 11. 51. 58,02 12. 1. 5,39			40,92 18,73 10,50 55,32 58,60 6,01		1,90	23. 9. 59,40 6. 38. 37,80 10. 0. 29,84 11. 6. 14,75 11. 53. 18,09 12. 2. 25,51	B. B. B. B. B. B.		
Mar. 8	Sirius..... (i) H. C. 13527..... (i) H. C. 13531..... (k) H. C. 13681..... (l) H. C. 13792.....	32,0 7,3 .... 44,0 21,5	45,9 22,1 29,6 59,2 36,4	59,7 36,2 43,6 14,2 51,2	14,0 50,7 58,0 30,0 6,5	28,0 5,0 12,1 45,2 21,7	41,7 33,2 26,2 0,3 36,4	55,9 6 .... 15,8 51,2	6. 37. 13,88 6. 50. 50,51 6. 50. 57,90 6. 55. 29,81 6. 59. 6,42			14,72 51,07 58,46 30,33 6,97	82,97	2,00	6. 38. 37,81 6. 52. 14,18 6. 52. 21,57 6. 56. 53,45 7. 0. 30,09	B. B. B. B. B.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

(a) 'Of the same Mag. and N.P.D. as H. C. 20183.' (b) Cloudy. 'Another north preceding.' (c) Wire III has been corrected by  $-1^s$ , and wire IV by  $+1^s$ , from a consideration of the intervals. 'Another object passed wire VI at 12.5.48.0.' (d) Very bad definition from atmospheric agitation. (e) Cloudy. (f) Steady: clouds passing. (g) 'A little rough.' (h) Interruption by cloud. (i) 'Counting one second in advance.' Corrections applied accordingly. (k) 'One north-following.' (l) The intervals allowed of observing this and the next star at all the wires.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Mar. 8	(a) H. C. 13797.....	29,2	44,1	58,9	14,1	29,1	44,0	59,0	6. 59. 14,05	+0,9	+0,3	+8,2	14,60		2,00	7. 0. 37,72			B.
	H. C. 13931.....	42,6	57,7	13,0	28,3	43,9	58,9	14,0	7. 2. 28,35				28,87			7. 3. 52,00			B.
	(b) 53 Geminorum..	32,2	48,2	3,3	18,7	34,0	49,2	4,6	7. 5. 18,60				19,12			7. 6. 42,25			B.
	(c) H. C. 14177.....	25,9	40,2	54,7	9,6	24,1	38,3	53,1	7. 9. 9,42				9,99			7. 10. 33,13			B.
	H. C. 14321.....	31,0	45,6	59,4	14,2	28,8	43,1	57,6	7. 13. 14,24				14,81			7. 14. 37,95			B.
	(d) H. C. 14495.....	51,9	6,3	20,8	35,8	50,1	5,0	19,2	7. 18. 35,59				36,16			7. 19. 59,31			B.
	* N.P.D. 66°. 55'	18,0	32,6	....	2,0	....	31,2	45,7	7. 19. 1,89				2,46			7. 20. 25,61			B.
	Castor.....	53,0	13,9	29,4	45,7	1,7	17,3	33,1	7. 23. 45,59				46,07	83,23		7. 25. 9,23			B.
	H. C. 14792.....	....	12,0	25,7	40,0	54,0	7,8	....	7. 26. 39,90				40,45			7. 28. 3,61			B.
	Procyon.....	29,2	42,7	56,2	9,9	23,1	36,7	50,2	7. 30. 9,72				10,32	83,17		7. 31. 33,49			B.
	Pollux.....	....	....	36,3	51,7	7,1	22,3	37,6	7. 34. 51,73				52,25	83,23		7. 36. 15,42			B.
Mar. 10	(e) ☉ 1 L.....	26,7	40,0	53,6	7,7	21,0	34,2	47,8	23. 21. 7,29			+8,6	8,03		1,91	23. 22. 34,50			B.
	☉ 2 L.....	36,3	50,2	3,2	17,2	30,6	44,0	57,8	23. 23. 17,05				17,79			23. 24. 44,26			B.
	H. C. 14515.....	12,7	27,0	40,7	54,8	9,0	22,8	36,8	7. 18. 54,83				55,39			7. 20. 22,49			B.
	Castor.....	54,1	10,1	25,6	41,7	57,7	13,4	29,2	7. 23. 41,68				42,18	87,09		7. 25. 9,29			B.
	H. C. 14794.....	0,2	14,7	29,0	43,8	58,0	12,2	26,6	7. 26. 43,50				44,08			7. 28. 11,20			B.
	Procyon.....	25,2	38,6	52,2	5,7	19,2	32,7	46,2	7. 30. 5,69				6,31	87,15		7. 31. 33,43			B.
	Pollux.....	2,0	17,2	32,2	48,0	3,2	18,4	33,6	7. 34. 47,80				48,34	87,11		7. 36. 15,46			B.
	(f) H. C. 15155 f....	38,2	52,2	6,3	20,9	35,1	49,1	3,6	7. 38. 20,77				21,35			7. 39. 48,48			B.
	H. C. 15231.....	....	12,8	27,3	43,0	58,0	13,1	....	7. 40. 42,84				43,39			7. 42. 10,52			B.
	H. C. 15325.....	28,2	43,1	58,2	13,6	28,7	43,4	59,0	7. 43. 13,45				14,00			7. 44. 41,13			B.
	H. C. 15547.....	39,9	54,1	8,6	23,1	37,9	52,0	6,2	7. 49. 23,11				23,69			7. 50. 50,83			B.
	7 Cancri.....	....	9,5	23,8	38,6	53,1	7,8	....	7. 53. 38,56				39,14			7. 55. 6,29			B.
Mar. 12	☉ 1 L.....	43,8	57,2	10,7	24,3	38,0	51,0	4,8	23. 28. 24,26				24,99		1,95	23. 29. 55,12			B.
	☉ 2 L.....	53,0	6,6	20,0	33,8	47,2	0,7	14,2	23. 30. 33,64				34,37			23. 32. 4,50			B.
	δ Ursæ Min. SP.	....	52,4	39,0	24,8	....	59,8	45,7	6. 18. 26,33				31,93						
	H. C. 12291.....	....	18,9	33,0	47,3	1,7	15,6	....	6. 16. 47,30				47,88			6. 18. 18,56			B.
	H. C. 12454.....	33,1	47,2	1,2	15,7	30,0	44,0	58,0	6. 21. 15,60				16,18			6. 22. 46,87			B.
	H. C. 12875.....	16,8	30,9	45,0	59,4	13,7	27,5	41,9	6. 32. 50,32				59,90			6. 34. 30,61			B.
	Sirius.....	24,2	38,2	51,8	6,2	20,2	34,0	48,2	6. 37. 6,12				6,99	90,63		6. 38. 37,70			B.
	H. C. 13065.....	....	....	23,2	37,8	52,3	6,7	21,0	6. 38. 37,83				38,40			6. 40. 9,11			B.
	H. C. 13194.....	29,6	44,6	59,3	14,6	29,6	44,3	59,4	6. 42. 14,48				15,04			6. 43. 45,76			B.
	37 Geminorum..	....	11,0	25,8	41,0	56,0	10,8	....	6. 44. 40,92				41,49			6. 46. 12,21			B.
	H. C. 13422.....	3,5	18,2	32,2	47,0	1,3	15,9	30,2	6. 47. 46,90				47,48			6. 49. 18,20			B.
	(g) H. C. 13527.....	0,0	14,2	28,2	42,9	57,0	11,1	25,4	6. 50. 42,68				43,26			6. 52. 13,99			B.
	(g) H. C. 13531.....	7,2	21,4	35,5	50,0	4,2	18,2	32,6	6. 50. 49,87				50,45			6. 52. 21,18			B.
	H. C. 13681.....	36,0	51,2	6,2	22,1	37,3	52,4	7,8	6. 55. 21,85				22,39			6. 56. 53,12			B.
	ε Hydræ.....	44,2	58,0	11,2	25,2	38,7	52,1	5,8	8. 37. 25,03				25,63	91,03		8. 38. 56,50			B.
	α Hydræ.....	7,3	20,7	34,2	48,0	1,6	15,2	28,6	9. 18. 47,95				48,73	90,86		9. 20. 19,66			B.
	(h) B. (w.) ix. 493 ..	52,2	6,0	19,6	33,6	47,2	0,9	14,5	9. 21. 33,43				33,99			9. 23. 4,92			B.
Mar. 13	Sirius.....	22,1	36,2	50,1	4,1	18,2	32,2	46,2	6. 37. 4,16		+1,2		5,05	92,55	2,00	6. 38. 37,76			B.
	Castor.....	48,0	4,0	19,7	36,0	52,0	7,5	23,6	7. 23. 35,83				36,39	92,82		7. 25. 9,17			B.
	B.A.C. 2514.....	....	13,0	26,9	42,0	57,0	11,7	....	7. 28. 42,12				42,76			7. 30. 15,54			B.
	* N.P.D. 71°. 40'	26,9	40,8	55,0	9,3	23,6	37,7	52,0	7. 33. 9,33				9,96			7. 34. 42,75			B.
	(i) H. C. 15155 f....	32,2	46,3	0,6	15,2	29,2	43,2	57,6	7. 38. 14,90				15,53			7. 39. 48,32			B.
	H. C. 15231.....	....	....	21,7	37,0	52,0	7,2	22,0	7. 40. 36,93				37,54			7. 42. 10,34			B.
	H. C. 15398.....	7,9	22,0	36,0	50,3	4,6	18,7	32,8	7. 44. 50,32				50,95			7. 46. 23,76			B.
	H. C. 15547.....	34,0	48,2	2,6	17,2	31,9	46,2	0,6	7. 49. 17,25				17,89			7. 50. 50,70			B.
	B. (w.) vii. 1576.	....	16,0	29,8	43,7	57,8	11,6	....	7. 51. 43,78				44,40			7. 53. 17,22			B.
	B. (w.) vii. 1654.	58,0	11,8	25,4	39,4	53,4	7,2	21,0	7. 54. 39,46				40,08			7. 56. 12,90			B.
	ε Hydræ.....	42,4	56,0	9,2	23,2	36,7	50,2	3,8	8. 37. 23,07				23,71	92,94		8. 38. 56,59			B.
	β Leonis.....	15,8	29,6	43,3	57,7	11,7	25,4	39,2	11. 39. 57,53				58,13	93,21		11. 41. 31,27			B.
	(k) Egeria.....	57,2	12,3	27,8	42,2	57,0	12,2	26,2	11. 54. 42,13				42,77			11. 56. 15,92			B.
Mar. 15	(l) ☉ 1 L.....	37,2	50,6	3,8	17,7	31,3	44,7	58,1	23. 39. 17,63				18,39			23. 40. 54,52			B.
	☉ 2 L.....	46,3	0,2	13,2	27,2	40,3	53,8	7,4	23. 41. 26,92				27,68			23. 43. 3,81			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40",317, - 26",873, - 13",601, + 0",041, + 13",535, + 26",886, + 40",328.

(a) 'Of the same N.P.D. as the preceding.' (b) Bad definition. (c) 'A star of Mag. 5 followed higher in the field,' viz. δ Geminorum. (d) 'One north-preceding.' (e) Bad definition and great motion. (f) 'The following was the brighter star.' (g) Both stars observed at all the wires, the difference of R.A. being about half the interval between consecutive wires. (h) After this the night was cloudy. (i) 'The brighter star.' (k) 'Mag. 10½.' (l) Extremely bad definition.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Mar. 16	* N.P.D. 63°. 6'	43,6	58,6	13,3	28,9	44,0	59,0	13,9	6.52.28,76	+0,9	+1,2	+8,6	29,87		1,76	6.54.8,01			B.
	H. C. 13681.....	28,2	43,4	58,6	14,2	29,6	44,6	0,0	6.55.14,08				14,68			6.56.53,32			B.
	(a) H. C. 13792.....	5,9	20,9	35,7	50,9	5,6	20,6	35,4	6.58.50,71				51,33			7.0.29,97			B.
	(a) H. C. 13797.....	13,3	28,2	43,0	58,2	13,2	28,0	43,2	6.58.58,16				58,78			7.0.37,42			B.
	H. C. 13937.....	35,1	49,2	3,6	18,2	33,0	47,2	1,6	7.2.18,27				18,91			7.3.57,56			B.
	H. C. 14113.....	18,1	32,0	46,0	0,3	14,2	28,3	42,4	7.7.0,18				0,80			7.8.39,48			B.
	H. C. 14242.....	1,5	16,6	31,6	47,0	1,9	16,8	31,8	7.10.46,75				47,37			7.12.26,03			B.
	(b) H. C. 14321.....			44,1	58,8	13,0	27,0	42,0	7.12.58,59				59,23			7.14.37,89			B.
	(b)(c) H. C. 14597.....	39,2	54,2	9,3	24,8	40,0	55,1		7.21.24,67				25,29			7.23.3,96			B.
	(b) Castor.....		58,0	13,8	30,0	45,7	1,7		7.23.29,84				30,40	98,76		7.25.9,07			B.
	(b) Procyon.....	13,8	27,2	40,5	54,1	7,8	21,1	34,7	7.29.54,17				54,83	98,54		7.31.33,51			B.
	Pollux.....		5,4	20,5	36,2	51,3	6,6		7.34.36,00				36,60	98,74		7.36.15,29			B.
Mar. 17	β Leonis.....		22,1	35,9	50,0	4,0	18,1		11.39.50,02				50,62	100,74	1,79				B.
	(d) Egeria.....	4,2	19,2	34,0	49,1	4,0	18,3	33,6	11.49.48,92				49,56			11.51.30,20			B.
	β Corvi.....	13,0	27,6	42,1	57,0	11,5	26,1	40,3	12.24.56,80				57,73	100,58					B.
Mar. 19	⊙ 1 L.....	5,3	18,3	32,0	45,9	59,3	12,7	26,2	23.53.45,67			+5,7	46,25		1,95	23.55.30,00			B.
	(b)(e) ⊙ 2 L.....	14,1	27,8	40,9				35,2	23.55.54,64				55,22			23.57.38,98			B.
	(f) δ Leonis.....	46,0	0,6	15,1	29,6	44,2	58,3	12,8	11.4.29,52				30,05	104,76		11.6.14,71			B.
	β Leonis.....	4,3	18,2	32,1	46,1	0,2	14,1	28,2	11.39.46,17				46,65	104,72		11.41.31,36			B.
	(g) Egeria.....			39,8	54,8	11,2		39,4	11.47.55,22				55,76			11.49.40,48			B.
	β Corvi.....	9,2	23,7	38,2	53,1	7,6	22,1	36,7	12.24.52,94				53,67	104,66		12.26.38,44			B.
	Flora.....	10,2	23,9	37,3	51,2	4,7	18,2	31,3	12.33.50,97				51,48			12.35.36,27			B.
Mar. 20	⊙ 1 L.....				22,1	35,7	49,1	2,7	23.57.22,15				22,73		1,91	23.59.8,42			B.
	⊙ 2 L.....	50,4	4,0	17,2	31,2	44,6	58,2	11,4	23.59.31,00				31,58			0.1.17,27			B.
	(h) H. C. 14495.....	28,3	42,9	57,3	12,2	27,1	41,4	56,0	7.18.12,17				12,70			7.19.58,96			B.
	H. C. 14554.....		27,1	41,4	56,2	11,1	25,7		7.19.56,30				56,83			7.21.43,10			B.
	Castor.....	34,7	50,4	6,2	22,4	38,2	54,0	10,0	7.23.22,27				22,75	106,34		7.25.9,03			B.
	(i) H. C. 14792.....	34,6	48,5	2,2	16,7	30,6	44,6	58,5	7.26.16,53				17,02			7.28.3,30			B.
	Procyon.....	6,0	19,4	32,8	46,7	0,2	13,6	27,1	7.29.46,54				47,05	106,26		7.31.33,34			B.
	Pollux.....		57,7	12,8	28,4	43,7	59,2		7.34.28,36				28,87	106,41		7.36.15,16			B.
	H. C. 15231.....	38,2	53,1	8,0	23,6	38,4	53,8	8,8	7.40.23,41				23,93			7.42.10,23			B.
	H. C. 15325.....	9,0	24,0	39,1	54,1	9,3	24,2	39,2	7.42.54,13				54,65			7.44.40,95			B.
	H. C. 15547.....	20,6	35,0	49,1	4,0	18,2	32,8	47,2	7.49.3,84				4,37			7.50.50,68			B.
	B. (w.) VII. 1576.....		2,1	16,2	30,2	44,2	58,1		7.51.30,16				30,65			7.53.16,97			B.
	(k) B. (w.) VII. 1654.....	44,4	58,2	12,1	26,0	40,1	53,7	7,7	7.54.26,03				26,52			7.56.12,84			B.
	B. (w.) VII. 1732.....		33,8	47,8	1,9	15,7	29,7		7.57.1,78				2,27			7.58.48,60			B.
	H. C. 15954.....	44,2	58,8	13,2	27,7	42,1	56,5	11,0	8.0.27,65				28,18			8.2.14,51			B.
	H. C. 16110.....	7,4	21,4	35,2	49,6	3,8	17,7	31,7	8.4.49,55				50,05			8.6.36,38			B.
	H. C. 16266.....	17,1	31,1	45,2	59,2	13,2	27,3	41,3	8.8.59,20				59,70			8.10.46,04			B.
	(l) H. C. 16380.....	51,8	6,0	20,0	34,2	48,4	2,4	16,8	8.12.34,23				34,74			8.14.21,08			B.
	(l) H. C. 16388.....	3,6	17,8	31,6	46,0	0,2	14,2	28,2	8.12.45,94				46,45			8.14.32,79			B.
	H. C. 16554.....	11,0	25,7	40,2	55,1	10,0	24,2	39,0	8.16.55,03				55,56			8.18.41,91			B.
	(m) B. (w.) VIII. 586.....	5,8	19,7	33,4	47,7	1,6	15,6	29,2	8.20.47,57				48,06			8.22.34,42			B.
	ε Hydrae.....	29,2	42,7	55,9	9,8	23,3	37,0	50,4	8.37.9,76				10,26	106,31		8.38.56,64			B.
	β Leonis.....	2,7	16,2	30,1	44,3	58,3	12,2	26,2	11.39.44,29				44,77	106,61		11.41.31,39			B.
	Egeria.....	2,9	17,7	32,0	47,2	2,3	15,9	31,6	11.46.47,09				47,63			11.48.34,26			B.
	β Corvi.....	7,3	21,8	36,2	51,1	5,8	20,1	34,8	12.24.51,01				51,74	106,60		12.26.38,42			B.
	Flora.....		24,2	37,4	51,3	4,9	18,4		12.32.51,24				51,74			12.34.38,43			B.
Mar. 22	(n) ⊙ 1 L.....	54,9	8,4	21,7	35,1	48,8	2,3	16,0	0.4.35,31			+0,3	35,84		1,84	0.6.25,17			T.
	⊙ 2 L.....	3,5	17,0	30,5	44,0	57,7	11,1	24,5	0.6.44,04				44,57			0.8.33,90			T.
	Rigel.....	54,0	7,6	20,9	34,3	48,6	1,8	15,6	5.5.34,69				35,31	109,64		5.7.25,02			T.
	Sirius.....	4,8	18,9	32,8	47,1	1,1	15,0	29,2	6.36.46,99				47,67	109,76		6.38.37,50			T.
	ω <sup>1</sup> Cancri.....	23,0	38,1	52,7	8,0	22,8	37,6	52,6	7.50.7,83				8,30			7.51.58,23			T.
	7 Cancri.....	32,0	46,7	0,8	15,6	30,2	44,6	59,2	7.53.15,59				16,06			7.55.5,99			T.
	H. C. 15834.....		19,0	32,8	46,9	1,0	14,9		7.56.46,92				47,37			7.58.37,30			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.

(a) 'Of equal N.P.D.' (b) Cloud. (c) 'A smaller of greater N.P.D. preceded about 10s.' (d) If this be the Planet the counting was 20s slow. (e) Bad definition. (f) The night had hitherto been overcast. (g) Very faint. (h) 'The second star of three.' The recorded time was 10m less. (i) 'Another north-preceding.' (k) 'A brighter south-preceding.' (l) The times which differ by less than 3s were recorded at the same entry. (m) 'A brighter somewhat lower in the field.' (n) Unsteady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Mar.22	H. C. 15938.....	16,3	30,2	44,0	58,2	12,0	26,0	39,8	7.59.58,07	+0,9	+0,3	+5,7	58,51		1,84	8.1.48,44	T.		
	H. C. 16066.....	54,9	9,3	23,4	38,1	52,3	6,7	20,9	8.3.37,95				38,42			8.5.28,36	T.		
	H. C. 16149.....		46,7	0,8	15,6	30,2	44,5		8.6.15,56				16,03			8.8.5,97	T.		
	(a) H. C. 16332.....	34,4	48,7	3,6	18,2	33,0	47,6	2,1	8.11.18,23				18,71			8.13.8,66	T.		
	H. C. 16797.....	51,6	5,4	19,0	33,0	46,9	0,6	14,7	8.23.33,03				33,47			8.25.23,43	T.		
	H. C. 16915.....	5,0	19,1	33,0	47,3	1,7	15,7	29,7	8.26.47,36				47,82			8.28.37,79	T.		
	B. (w.) VIII. 811..		48,2	1,8	15,9	29,9	43,7		8.29.15,90				16,34			8.31.6,31	T.		
	B.A.C. 2931.....		0,7	15,0	29,5	44,0	58,1		8.31.29,46				29,93			8.33.19,90	T.		
	(b) H. C. 17225.....	30,8	45,0	59,2	13,6	27,9	42,2	56,4	8.35.13,58				14,04			8.37.4,02	T.		
	ε Hydræ.....	25,3	38,9	52,3	6,0	19,6	33,4	46,8	8.37.6,04				6,50	110,05		8.38.56,48	T.		
	54 Cancri.....	14,3	28,6	42,3	56,7	10,7	24,6	38,5	8.40.56,53				56,97			8.42.46,96	T.		
	(c) B. (w.) VIII. 1210	4,1	18,1	31,8	45,3	59,8	13,7	27,6	8.44.45,77				46,21			8.46.36,20	T.		
	H. C. 19617.....	37,3	50,9	4,2	18,2	31,8	45,2	59,0	9.53.18,09				18,55			9.55.8,63	T.		
	B. (w.) IX. 1243..	9,8	23,8	37,6	51,2	5,2	19,0	32,7	9.55.51,32				51,76			9.57.41,85	T.		
	Regulus.....	57,8	11,7	25,3	39,3	53,2	6,9	20,7	9.58.39,28				39,71	110,12		10.0.29,80	T.		
	β Leonis.....	58,8	12,6	26,8	40,6	54,8	8,6	22,6	11.39.40,68				41,12	110,26		11.41.31,34	T.		
	(d) Egeria.....	50,0	5,0	19,2	34,5		4,0	18,7	11.44.34,38				34,86			11.46.25,08	T.		
Mar.23	⊙ 1 L.....		45,0	58,1	12,0	25,2	38,3		0.8.11,72				12,25		1,81	0.10.3,40	T.		
	⊙ 2 L.....	40,0	53,4	6,7	20,7	34,0	47,6	0,9	0.10.20,47				21,00			0.12.12,15	T.		
	Polaris.....	57,0	37,0				26,0	12,0	1.2.62,76				57,44			1.4.48,66	T.		
	H. C. 14556.....	6,0	20,3	34,6	49,1	3,6	17,6	32,0	7.19.49,03				49,50			7.21.41,19	T.		
	Castor.....	29,1	44,9	0,7	16,7	32,7	48,6	4,6	7.23.16,76				17,18	111,85		7.25.8,88	T.		
	(e) H. C. 14792.....	29,0	43,0	56,9	11,0	25,1	39,1	53,2	7.26.11,04				11,48			7.28.3,18	T.		
	(f) Procyon.....	0,5	14,0	27,3	41,1	54,6	7,9	21,6	7.29.41,00				41,47	111,79		7.31.33,18	T.		
	Pollux.....	37,2	52,4	7,4	23,0	38,3	53,4	8,8	7.34.22,93				23,37	111,85		7.36.15,08	T.		
	α Hydræ.....	46,3	59,9	13,4	27,2	41,0	54,2	8,0	9.18.27,14				27,75	111,74		9.20.19,59	T.		
	B. (w.) IX. 533..	4,5	18,6	32,0	46,0	0,1	13,7	27,6	9.22.46,07				46,51			9.24.38,36	T.		
	H. C. 18861.....	35,2	49,7	3,7	18,2	32,8	46,8	1,1	9.26.18,22				18,69			9.28.10,54	T.		
	(g) B. (w.) IX. 692..	43,0	56,8	10,2	24,1	37,7	51,2	4,8	9.29.23,97				24,41			9.31.16,27	T.		
	(h) B. (w.) IX. 782..	5,2	19,2	32,9	46,9	0,9	14,7	28,7	9.33.46,93				47,37			9.35.39,23	T.		
	H. C. 19191.....	52,7	6,2	19,7	33,6	47,3	0,7	14,6	9.37.33,54				33,98			9.39.25,85	T.		
	B. (w.) IX. 929..	14,6	28,3	42,2	56,3	10,3	24,1	38,1	9.40.56,27				56,71			9.42.48,58	T.		
	Regulus.....	56,2	10,0	23,6	37,5	51,3	5,0	18,7	9.58.37,47				37,90	111,92		10.0.29,79	T.		
	B. (w.) X. 37.....	50,7	4,0	17,3	31,2	44,7	58,1	11,6	10.1.31,08				31,55			10.3.23,45	T.		
	δ Leonis.....	39,2	53,6	7,8	22,3	37,1	51,2	5,6	11.4.22,40				22,87	111,94		11.6.14,85	T.		
	β Leonis.....	57,2	11,0	24,7	39,0	53,0	6,9	20,9	11.39.38,96				39,40	111,98		11.41.31,42	T.		
	(i) Egeria.....	44,7	59,1	13,7	28,8	43,7	58,6	13,1	11.43.28,82				29,30			11.45.21,32	T.		
	β Corvi.....	2,0	16,4	31,0	45,9	0,3	15,1	29,4	12.24.45,73				46,44	111,92		12.26.38,52	T.		
	Flora.....	10,1	23,7	37,0	50,6	4,2	17,7	31,2	12.29.50,64				51,10			12.31.43,18	T.		
	Polaris SP.....	45,0	31,0	7,0	49,0				13.2.49,60				56,45	114,92		13.4.48,58	T.		
Mar.25	(k) ⊙ 2 L.....	52,2	6,1	19,2	33,2	46,8	0,1	13,7	0.17.33,04				33,56			0.19.28,34	T.		
Mar.29	(l) ⊙ 1 L.....	9,7	23,3	36,4	50,2	4,0	17,2	31,0	0.29.50,25		+1,1	+7,4	50,86		1,60	0.31.51,47	T.		
	⊙ 2 L.....	18,7	32,1	45,3	59,1	12,4	26,1	39,5	0.31.59,03				59,64			0.34.0,25	T.		
Mar.30	(k) ⊙ 1 L.....	10,1	24,3	39,2	54,2	9,2	23,9	38,7	8.25.54,23				54,81		1,63	8.27.57,56	T.		
Apr. 1	⊙ 1 L.....	59,7	13,0	26,4	40,2	53,9	7,1	20,5	0.40.40,11				40,70		1,66	0.42.46,22	T.		
	⊙ 2 L.....	8,1	21,9	35,2	48,9	2,5	15,8	29,5	0.42.48,85				49,44			0.44.55,36	T.		
	Aldebaran.....	36,2	50,6	4,2	18,7	32,7	46,6	0,7	4.25.18,53				19,09	125,80		4.27.24,87	T.		
	B. (w.) IX. 350...	57,2	10,7	24,2	38,2	52,1	5,7	19,2	9.14.38,19				38,74			9.16.44,85	T.		
	α Hydræ.....	31,9	45,3	58,9	12,6	26,3	39,8	53,5	9.18.12,63				13,37	126,01		9.20.19,48	T.		
	B. (w.) IX. 493..	17,1	30,7	44,1	57,7	11,8	25,3	39,1	9.20.57,97				58,52			9.23.4,64	T.		
	Regulus.....	41,6	55,2	9,0	23,0	36,7	50,3	4,3	9.58.22,87				23,43	126,32		10.0.29,59	T.		
	γ Leonis np.....	59,3	13,4	27,8	42,3	56,6	11,0	25,5	10.9.42,27				42,84			10.11.49,02	T.		
	⊙ 1 L.....	59,5	13,8	28,0	42,2	56,5	10,5	24,8	10.26.42,18				42,74			10.28.48,93	T.		
	χ Leonis.....	36,1	49,6	3,1	16,9	30,7	44,1	57,7	10.55.16,89				17,46			10.57.23,69	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

(a) 'Counting 9<sup>s</sup> fast.' Correction applied accordingly. (b) Disturbance between wires III and IV. (c) All the wires have been diminished 10<sup>s</sup>.  
 (d) 'Extremely faint: a brighter north-following.' (e) The noted time was 1<sup>m</sup> greater. (f) Disturbance by a cart passing in the court. (g) 'Counting 14<sup>s</sup> slow.' Correction applied. (h) 'The south-preceding of two.' (i) A brighter north-preceding by 6<sup>s</sup>.32 was observed at three wires. (k) Cloudy.  
 (l) Unsteady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Apr. 1	δ Leonis.....	24,6	39,0	53,3	7,8	22,6	36,7	51,3	11. 4. 7,90	+0,9	+1,1	+7,4	8,49	126,29	1,66	11. 6. 14,73			T.
	ι Leonis.....	25,0	39,1	52,8	6,5	20,3	33,8	47,8	11. 14. 6,47				7,02			11. 16. 13,27			T.
	(a)(b) Egeria.....	35,0	49,7	4,0	19,0	34,1	48,8	3,3	11. 34. 19,13				19,72			11. 36. 25,99			T.
	β Leonis.....	42,8	56,4	10,2	24,4	38,8	52,6	6,2	11. 39. 24,49				25,04	126,35		11. 41. 31,32			T.
	(b) Flora.....	6,2	20,1	33,3	47,2	0,7	14,1	27,7	12. 20. 47,05				47,62			12. 22. 53,95			T.
	β Corvi.....	47,4	2,1	16,5	31,6	46,0	0,4	15,0	12. 24. 31,28				32,12	126,29		12. 26. 38,45			T.
	Antares.....	28,7	43,9	58,5	13,9	28,8	43,6	58,7	16. 18. 13,73				14,59	126,39		16. 20. 21,19			T.
Apr. 2	(c)(d) ε Hydræ.....	7,6	20,9	34,2	48,2	1,7	15,2	28,6	8. 36. 48,07				48,65	127,74		8. 38. 56,36			T.
	(e) H. C. 19442.....	38,9	52,8	6,6	20,7	34,7	48,5	2,2	9. 48. 20,61				21,17		1,63	9. 48. 35,02			T.
	B. (w.) IX. 1118..	3,6	17,3	30,6	44,3	57,9	11,5	25,0	9. 51. 44,31				44,90			9. 51. 58,75			T.
	(f) B. (w.) IX. 1221..	49,2	2,3	16,1	30,1	43,7	....	....	9. 56. 16,28				16,84			9. 56. 30,69			T.
	Regulus.....	34,0	47,8	1,3	15,3	29,3	43,1	56,8	10. 0. 15,37				15,93	13,81		10. 0. 29,79			T.
	χ Leonis.....	28,4	41,8	55,3	9,3	23,0	36,4	49,9	10. 57. 9,16				9,73			10. 57. 23,66			T.
	(g) δ Leonis.....	16,8	31,2	45,5	0,1	14,7	28,7	43,5	11. 6. 0,07				0,66	14,12		11. 6. 14,59			T.
	ι Leonis.....	17,7	31,6	44,8	58,8	12,5	26,4	40,1	11. 15. 58,85				59,40			11. 16. 13,35			T.
	γ 1 L.....	16,0	29,8	43,6	58,0	11,8	25,6	39,6	11. 27. 57,77				58,34			11. 28. 12,30			T.
	Flora.....	1,2	14,7	28,3	41,8	55,3	9,1	22,7	12. 21. 41,87				42,44			12. 21. 56,46			T.
	β Corvi.....	39,8	54,7	9,0	23,8	38,2	52,7	7,2	12. 26. 23,63				24,47	13,95		12. 26. 38,50			T.
	(h) Spica.....	29,4	43,2	56,7	10,2	24,2	37,8	51,2	13. 17. 10,38				11,13	13,98		13. 17. 25,21			T.
Apr. 3	(i) γ 1 L.....	....	....	33,3	47,2	1,2	14,2	27,1	0. 49. 47,07				47,66		1,65	0. 50. 2,48			T.
	γ 2 L.....	15,7	29,2	42,8	56,2	10,0	23,5	37,0	0. 51. 56,34				56,93			0. 52. 11,75			T.
	(f) ε Cancri.....	58,7	13,0	27,1	41,2	56,0	10,2	24,2	8. 31. 41,48				42,06			8. 31. 57,41			T.
	(k) B. (w.) VIII. 936.	43,3	57,2	11,0	25,1	39,0	52,8	6,7	8. 35. 25,01				25,57			8. 35. 40,92			T.
	ε Hydræ.....	59,9	13,3	26,7	40,6	54,1	7,7	21,1	8. 38. 40,48				41,06	15,31		8. 38. 56,42			T.
	54 Cancri.....	49,0	3,0	16,7	30,7	44,9	58,9	12,8	8. 42. 30,85				31,41			8. 42. 46,77			T.
	(l) H. C. 17513.....	28,3	42,8	57,1	12,2	26,7	41,2	55,9	8. 45. 12,03				12,62			8. 45. 27,98			T.
	(h) Regulus.....	32,2	46,2	59,8	13,8	57,5	41,2	54,9	10. 0. 13,66				14,22	15,51		10. 0. 29,67			T.
	δ Leonis.....	15,2	29,5	44,1	58,8	13,2	27,2	42,0	11. 5. 58,57				59,16	15,61		11. 6. 14,68			T.
	(m) Egeria.....	....	....	....	....	....	53,0	8,8	11. 34. 24,14				24,73			11. 34. 40,29			T.
	γ 1 L.....	59,7	13,2	27,1	41,2	55,1	8,8	22,6	12. 26. 41,10				41,73			12. 26. 57,35			T.
Apr. 8	γ 1 L.....	....	26,3	39,8	53,6	7,2	20,3	....	1. 7. 53,44			+0,9	54,01		1,75	1. 8. 17,59			T.
	γ 2 L.....	21,8	35,6	49,2	2,7	16,3	29,9	43,4	1. 10. 2,70				3,27			1. 10. 26,85			T.
	ε Hydræ.....	51,1	4,5	18,0	31,6	45,3	58,9	12,2	8. 38. 31,65				32,22	24,08					T.
	δ Leonis.....	6,6	20,8	35,2	50,1	4,3	18,7	33,1	11. 5. 49,82				50,39	24,36					T.
	(n) Egeria.....	28,5	....	57,4	....	27,1	42,0	....	11. 30. 12,43				13,00			11. 30. 37,34			T.
Apr. 10	(c) γ 1 L.....	....	42,2	56,0	....	23,3	....	....	1. 15. 9,59				10,15		1,67	1. 15. 37,26			T.
	γ 2 L.....	38,2	51,7	5,1	18,8	32,8	46,3	59,7	1. 17. 18,95				19,51			1. 17. 46,62			T.
	Aldebaran.....	14,8	28,8	42,4	56,8	10,8	24,8	38,9	4. 26. 56,76				57,31	27,47		4. 27. 24,64			T.
	(c) Pollux.....	0,9	16,2	....	46,9	2,2	17,3	32,7	7. 35. 46,79				47,33	27,56		7. 36. 14,88			T.
	ε Hydræ.....	47,6	1,1	14,6	28,2	41,6	55,2	8,8	8. 38. 28,16				28,73	27,54		8. 38. 56,35			T.
	α Hydræ.....	10,1	23,6	37,2	50,8	4,6	18,1	31,7	9. 19. 50,87				51,60	27,66		9. 20. 19,27			T.
	Regulus.....	20,1	33,7	47,4	1,5	15,2	29,1	42,8	10. 0. 1,40				1,95	27,70		10. 0. 29,67			T.
	Flora.....	....	44,3	57,8	11,3	25,3	38,6	....	12. 14. 11,46				12,02			12. 14. 39,89			T.
	(o) Polaris SP.....	11,0	52,0	28,5	11,0	3,0	....	....	13. 4. 14,03				22,46			13. 4. 50,39			T.
	Spica.....	15,6	29,2	42,8	56,7	10,2	23,8	37,3	13. 16. 56,52				57,26	27,91		13. 17. 25,20			T.
Apr. 11	(p) Polaris.....	24,0	3,5	38,0	29,3	....	53,0	....	1. 4. 27,13			+1,3	21,29		1,82	1. 4. 51,50			T.
Apr. 12	(q) γ 1 L.....	....	....	....	....	....	54,2	7,7	1. 22. 26,85				27,42			1. 22. 57,66			T.
	γ 2 L.....	55,7	9,5	22,7	36,7	50,4	3,7	17,7	1. 24. 36,63				37,20			1. 25. 7,44			T.
	Aldebaran.....	11,7	25,3	39,5	53,8	7,3	21,7	35,7	4. 26. 53,57				54,14	30,62		4. 27. 24,61			T.
	ε Hydræ.....	44,3	57,6	11,2	24,9	38,3	51,8	5,4	8. 38. 24,79				25,38	30,46		8. 38. 56,16			T.
	B. (w.) IX. 233..	....	39,0	52,3	6,2	20,1	33,7	....	9. 11. 6,26				6,82			9. 11. 37,65			T.
	H. C. 18457.....	21,1	35,2	49,0	3,2	17,3	31,2	45,2	9. 14. 3,17				3,74			9. 14. 34,57			T.
	B. (w.) IX. 359..	1,5	15,6	29,2	43,2	57,4	11,1	25,2	9. 16. 43,31				43,87			9. 17. 14,70			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

April 2, after the transit of ε Hydræ, Hardy was stopped and put forward 2<sup>m</sup>.

(a) Quite alone. (b) Very faint. (c) Cloudy. (d) Grouped with the clock-stars of April 1. (e) 'The south-following of two.'  
 (f) 'The north-following of two.' (g) Extremely unsteady. (h) Bad definition. (i) Great motion. (k) 'Counting 2<sup>s</sup> fast.' Correction applied.  
 (l) Disturbance by noise. (m) Too faint for more wires: these were considered pretty good. (n) Alone: extremely faint. (o) Wire II was increased 1<sup>m</sup>.  
 (p) Extremely unsteady: the observation considered not good. (q) No definition.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Apr. 12	$\alpha$ Hydræ.....	6,8	20,3	33,8	47,7	1,2	14,8	28,5	9.19.47,59	+0,9	+1,3	+7,4	48,33	30,90	1,82	9.20.19,17			T.
	B. (w.) IX. 493...	52,1	5,7	19,3	33,2	47,0	0,6	14,2	9.22.33,16				33,72			9.23.4,56			T.
	B. (w.) IX. 564...	31,4	45,1	58,4	12,7	26,2	39,9	53,6	9.25.12,47				13,03			9.25.43,87			T.
	B. (w.) IX. 657...	30,4	43,9	57,3	11,2	25,0	38,2	51,8	9.29.11,11				11,69			9.29.42,54			T.
	B. (w.) IX. 717...	24,8	38,3	51,8	5,7	19,4	33,1	46,8	9.32.5,70				6,27			9.32.37,12			T.
	(a) B. (w.) IX. 782...	26,1	39,7	53,4	7,6	21,6	35,3	49,2	9.35.7,56				8,13			9.35.38,99			T.
	B. (w.) IX. 929...	35,1	49,2	2,8	17,1	31,1	44,8	58,8	9.42.16,99				17,55			9.42.48,41			T.
	(b) B. (w.) IX. 985...	12,2	26,0	39,4	53,3	7,3	21,0	34,6	9.44.53,40				53,97			9.45.24,84			T.
	Psyche.....	10,4	24,3	....	51,2	....	....	....	9.49.37,88				38,45			9.50.9,32			T.
	B. (w.) IX. 1221...	18,3	31,8	45,6	59,2	13,1	26,5	40,2	9.55.59,25				59,82			9.56.30,70			T.
	Regulus.....	16,7	30,4	44,2	58,1	11,7	25,6	39,4	9.59.58,02				58,59	31,04		10.0.29,48			T.
	$\epsilon$ Leonis.....	34,2	47,3	0,7	14,5	28,0	41,2	54,8	11.22.14,39				15,09			11.22.46,08			T.
	(c) Egeria.....	....	....	....	....	....	48,0	2,8	11.27.18,89				19,50			11.27.50,50			T.
	Flora.....	47,1	0,6	14,1	28,1	41,7	54,9	8,6	12.12.27,87				28,44			12.12.59,49			T.
	$\beta$ Corvi.....	22,9	37,2	51,9	6,5	21,3	35,8	50,4	12.26.6,57				7,42	31,02		12.26.38,50			T.
	Polaris SP.....	6,0	49,5	25,0	8,0	....	....	....	13.4.9,83				17,46			13.4.48,58			T.
	(d)(e) $\alpha$ Pegasi.....	....	21,9	35,7	49,7	3,7	17,3	....	22.56.49,66				50,22	32,10	1,80	22.57.22,22			T.
	(f) $\alpha$ Andromedæ...	....	40,1	55,1	10,5	26,0	41,1	....	0.0.10,56				11,13	32,17		0.0.43,19			T.
	(g) Polaris.....	18,0	56,0	32,0	....	5,5	40,0	24,0	1.4.19,52				13,68			1.4.45,82			T.
Apr. 13	$\odot$ 1 L.....	25,0	38,3	52,2	6,2	19,8	33,4	47,1	1.26.6,00				6,58			1.26.38,75			T.
	$\odot$ 2 L.....	34,9	48,3	1,9	15,7	29,4	43,1	56,9	1.28.15,74				16,32			1.28.48,49			T.
	(e) Aldebaran.....	....	23,7	37,4	51,8	5,9	20,0	....	4.26.51,76				52,33	32,42		4.27.24,73			T.
	(h) Rigel.....	10,7	24,2	37,7	51,4	5,2	18,5	32,4	5.6.51,44				52,19	32,42		5.7.24,63			T.
	$\alpha$ Orionis.....	55,1	8,6	22,0	35,7	49,2	3,0	16,3	5.46.35,70				36,28	32,49		5.47.8,78			T.
	Procyon.....	19,1	32,7	46,1	59,7	13,2	26,6	40,1	7.30.59,65				60,25	32,66		7.31.32,88			T.
	$\epsilon$ Hydræ.....	42,2	55,7	9,3	22,8	36,6	50,1	3,7	8.38.22,91				23,50	32,72		8.38.56,21			T.
	Psyche.....	....	7,1	....	34,2	48,2	2,2	16,0	9.49.34,44				35,01			9.50.7,81			T.
	H. C. 19589.....	54,1	7,9	21,7	35,9	49,7	3,5	17,2	9.53.35,71				36,27			9.54.9,07			T.
	B. (w.) IX. 1243...	26,6	40,6	54,2	8,3	22,2	36,0	49,8	9.57.8,25				8,81			9.57.41,62			T.
	Regulus.....	15,0	28,7	42,3	56,4	10,2	23,9	37,6	9.59.56,30				56,87	32,74		10.0.29,68			T.
	(i) Egeria.....	56,1	10,5	25,1	40,0	54,8	9,2	23,5	11.26.39,88				40,48			11.27.13,40			T.
	(i) Flora.....	56,3	9,7	23,6	37,5	50,9	4,2	18,2	12.11.37,20				37,77			12.12.10,75			T.
	$\beta$ Corvi.....	21,2	35,5	50,1	5,0	19,4	33,8	48,3	12.26.4,76				5,61	32,83		12.26.38,60			T.
	Spica.....	10,3	24,1	37,5	51,4	5,2	18,8	32,4	13.16.51,38				52,13	33,06		13.17.25,19			T.
	(d) $\odot$ 2 L.....	45,0	59,3	13,2	28,0	42,3	56,5	11,0	22.8.27,90				28,72		1,62	22.9.2,38			T.
	$\alpha$ Pegasi.....	6,2	20,1	34,0	48,1	2,0	15,9	29,7	22.56.48,00				48,56	33,79		22.57.22,27			T.
Apr. 14	$\odot$ 1 L.....	4,5	18,1	31,6	45,9	59,2	13,1	26,4	1.29.45,54				46,11			1.30.19,99			T.
	$\odot$ 2 L.....	14,2	27,8	41,6	55,3	9,1	22,8	36,6	1.31.55,34				55,91			1.32.29,79			T.
	Regulus.....	13,2	27,0	40,4	54,7	8,4	22,2	35,8	9.59.54,53				55,10	24,50		10.0.29,55			T.
	(k) Egeria.....	18,3	33,1	47,8	2,3	17,0	51,7	46,1	11.26.2,33				2,93			11.26.37,48			T.
	$\beta$ Leonis.....	14,3	28,2	42,1	56,4	10,1	24,1	38,1	11.40.56,19				56,75	34,60		11.41.31,32			T.
	Flora.....	7,4	20,8	34,3	48,2	1,7	15,4	28,8	12.10.48,09				48,66			12.11.23,26			T.
	$\beta$ Corvi.....	19,2	34,0	48,2	3,2	17,8	32,3	46,7	12.26.3,05				3,90	34,54		12.26.38,52			T.
	Spica.....	8,8	22,5	36,1	50,0	3,4	17,1	30,8	13.16.49,81				50,56	34,63		13.17.25,24			T.
	$\alpha$ Andromedæ...	21,7	36,8	51,7	7,4	22,7	37,8	53,2	0.0.7,33				7,50	35,44	1,68				T.
	$\odot$ 1 L.....	44,5	58,1	11,8	25,7	39,5	52,7	6,6	1.33.25,56				26,13			1.34.1,68			T.
Apr. 15	$\odot$ 2 L.....	54,4	8,0	21,7	35,6	49,2	2,9	16,4	1.35.35,46				36,03			1.36.11,58			T.
Apr. 16	(l) $\alpha$ Hydræ.....	0,4	14,0	27,2	41,1	54,6	8,2	21,7	9.19.41,03			+0,5	41,75	37,43	1,52	9.20.19,18			T.
	(m) Psyche.....	....	....	....	....	....	1,7	....	9.49.34,01				34,54			9.50.12,00			T.
	Regulus.....	10,2	24,0	37,6	51,4	5,2	19,2	32,9	9.59.51,50				52,02	37,56		10.0.29,49			T.
	Egeria.....	9,2	23,8	38,2	53,0	7,4	21,8	36,6	11.24.52,85				53,40			11.25.30,96			T.
	$\beta$ Leonis.....	11,2	25,2	39,1	53,4	7,3	21,2	35,0	11.40.53,20				53,71	37,63		11.41.31,29			T.
	Flora.....	33,1	46,3	59,9	13,7	27,1	41,0	54,6	12.9.13,67				14,21			12.9.51,82			T.
	$\beta$ Corvi.....	16,2	31,1	45,3	0,3	14,8	29,2	44,0	12.26.0,12				0,95	37,48		12.26.38,58			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

(a) 'Two lower in the field.' (b) 'The north-preceding of two.' (c) 'Nothing near this except a fainter object lower.' (d) 'Extremely faint.'  
 (e) Great motion. (f) Faint. (g) Wire VI has been increased  $10^s$  from a consideration of the intervals. (h) 'Counting 1<sup>s</sup> slow.' Correction applied.  
 (i) Satisfactory observations. (k) 'A brighter object preceded by about  $5^s$ .' (l) The noted times were  $10^s$  greater. (m) This wire was considered good.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Apr. 17	(a) ☉ 1 L.....	....	....	....	....	....	14,2	28,0	1. 40. 46,82	+0,9	+0,5	+7,4	47,34		1,55	1. 41. 25,81	T.		
	(b) ☉ 2 L.....	15,7	29,3	43,1	57,0	10,2	24,1	38,0	1. 42. 56,77				57,29			1. 43. 35,76	T.		
	δ Leonis.....	51,8	6,2	20,2	35,1	49,6	3,8	18,2	11. 5. 34,99				35,54	39,14		11. 6. 14,62	T.		
	Egeria.....	37,3	51,7	....	21,0	....	50,2	4,3	11. 24. 20,89				21,44			11. 25. 0,54	T.		
	β Leonis.....	9,7	23,7	37,4	51,7	5,7	19,7	33,4	11. 40. 51,61				52,12	39,21		11. 41. 31,23	T.		
	Flora.....	47,5	1,0	14,3	28,2	41,8	55,6	9,2	12. 8. 28,23				28,77			12. 9. 7,91	T.		
	(c) β Corvi.....	15,0	29,3	44,1	58,8	13,2	27,9	42,2	12. 25. 58,63				59,46	38,97		12. 26. 38,62	T.		
	B. (w.) XIII. 243.	36,0	49,5	3,3	17,2	31,2	44,8	58,7	13. 14. 17,24				17,99			13. 14. 57,20	T.		
	Spica.....	4,3	17,8	31,3	45,3	59,1	12,6	26,3	13. 16. 45,24				45,97	39,23		13. 17. 25,19	T.		
Apr. 19	(d) δ Leonis.....	48,3	2,9	17,2	32,0	46,2	0,7	15,1	11. 5. 31,77			+7,0	32,30	42,36	1,74	11. 6. 14,55	T.		
	(e) Egeria.....	....	53,8	....	21,7	36,2	50,7	4,9	11. 23. 21,82				22,36			11. 24. 4,64	T.		
	β Corvi.....	11,7	26,3	40,7	55,4	10,2	24,6	39,1	12. 25. 55,43				56,24	42,19		12. 26. 38,59	T.		
	Spica.....	1,2	14,7	28,5	42,3	55,8	9,4	23,2	13. 16. 42,15				42,86	42,36		13. 17. 25,27	T.		
	B. (w.) XIII. 322.	46,0	59,8	13,4	27,5	41,3	54,9	8,8	13. 19. 27,39				28,13			13. 20. 10,55	T.		
	B. (w.) XIII. 391.	38,8	52,2	5,7	19,7	33,3	47,0	0,4	13. 23. 19,59				20,30			13. 24. 2,72	T.		
	(f) B. (w.) XIII. 444.	....	29,4	43,2	57,2	10,8	24,8	....	13. 25. 57,08				57,82			13. 26. 40,24	T.		
	H. C. 25979.....	44,2	58,7	12,5	26,7	40,8	54,7	8,7	14. 2. 26,62				27,39			14. 3. 9,86	T.		
	H. C. 26054.....	40,2	54,2	8,2	22,7	36,9	51,0	4,8	14. 5. 22,57				23,35			14. 6. 5,82	T.		
	(g) Arcturus.....	30,1	44,2	58,3	12,8	27,3	41,3	55,7	14. 8. 12,81				13,34	42,55		14. 8. 55,82	T.		
	α Andromedæ...	14,0	28,9	44,1	59,7	15,0	30,1	45,6	23. 59. 59,63				60,13	43,29	1,78	0. 0. 43,37	T.		
	Apr. 20	☉ 1 L.....	9,9	23,5	37,3	51,2	5,1	18,6	32,6	1. 51. 51,17				51,67			1. 52. 35,05	T.	
		☉ 2 L.....	20,2	34,1	47,5	1,4	15,2	29,1	42,9	1. 54. 1,47				1,97			1. 54. 45,35	T.	
		Sirius.....	10,3	24,3	38,2	52,5	6,7	20,4	34,2	6. 37. 52,37				53,14	43,76		6. 38. 36,87	T.	
(h)(i) ε Hydræ.....		....	44,7	58,0	11,6	25,2	38,8	....	8. 38. 11,66				12,19	43,93		8. 38. 56,07	T.		
(h)(k) H. C. 19589....		43,0	56,8	10,6	24,6	38,2	52,1	6,0	9. 53. 24,47				24,97			9. 54. 8,94	T.		
B. (w.) IX. 1231.		34,3	48,2	1,8	15,7	29,6	43,2	56,9	9. 56. 15,66				16,16			9. 57. 0,14	T.		
Regulus.....		3,8	17,4	31,2	45,3	59,1	12,6	26,4	9. 59. 45,11				45,62	43,91		10. 0. 29,60	T.		
(l) B. (w.) X. 161...		35,9	49,1	2,2	16,4	30,1	43,6	57,1	10. 9. 16,34				16,86			10. 10. 0,85	T.		
H. C. 20080.....		11,9	25,7	39,4	53,2	7,1	20,8	34,4	10. 12. 53,21				53,71			10. 13. 37,71	T.		
B. (w.) X. 285...		39,7	53,6	7,1	21,2	35,1	48,8	2,7	10. 16. 21,17				21,68			10. 17. 5,68	T.		
B. (w.) X. 354...		44,6	58,1	11,6	25,5	39,1	52,6	6,3	10. 19. 25,40				25,92			10. 20. 9,93	T.		
B. (w.) X. 422...		45,1	58,7	11,9	25,6	39,2	52,7	6,2	10. 23. 25,63				26,17			10. 24. 10,18	T.		
B. (w.) X. 474...		36,2	50,0	3,7	17,7	31,7	45,3	59,1	10. 26. 17,67				18,18			10. 27. 2,19	T.		
(m) B. (w.) X. 576...		52,7	6,1	19,5	33,2	46,7	0,2	13,8	10. 31. 33,17				33,75			10. 32. 17,77	T.		
B. (w.) X. 658...		29,1	43,2	56,4	9,8	23,6	37,0	50,2	10. 36. 9,90				10,44			10. 36. 54,47	T.		
B. (w.) X. 718...		2,8	16,4	29,8	43,7	57,6	11,0	24,7	10. 39. 43,71				44,22			10. 40. 28,25	T.		
B. (w.) X. 776...		47,7	1,1	14,7	28,6	41,9	55,4	8,9	10. 42. 28,33				28,87			10. 43. 12,90	T.		
B. (w.) X. 846...		49,7	3,1	16,2	30,2	43,4	57,0	10,3	10. 45. 29,98				30,56			10. 46. 14,60	T.		
(n) B. (w.) X. 910...		47,3	0,6	14,1	27,9	41,6	54,8	8,2	10. 49. 27,79				28,37			10. 50. 12,41	T.		
B. (w.) X. 964...		59,0	12,3	26,2	39,7	53,6	6,8	20,2	10. 52. 39,69				40,23			10. 53. 24,28	T.		
(h)(o) Egeria.....		....	....	....	....	8,2	22,8	37,8	11. 22. 53,90				54,44			11. 23. 38,52	T.		
Arcturus.....		28,3	42,4	56,7	11,2	25,6	39,7	54,0	14. 8. 11,12				11,65	44,25		14. 8. 55,94	T.		
(k) α Andromedæ...		12,1	27,3	42,5	57,8	13,2	28,3	43,7	23. 59. 57,85				58,35	45,09	1,64	0. 0. 43,36	T.		
(p)(q) Polaris.....		13,0	50,0	....	....	58,0	....	20,0	1. 4. 14,31				7,41				T.		
Apr. 21		(q) ☉ 1 L.....	52,5	6,1	19,5	33,7	47,6	1,2	15,0	1. 55. 33,66				34,16			1. 56. 19,30	T.	
		☉ 2 L.....	2,7	16,4	30,2	44,2	58,0	11,8	25,6	1. 57. 44,13				44,63			1. 58. 29,77	T.	
		(q) Rigel.....	....	11,2	24,7	38,6	52,2	5,7	....	5. 6. 38,48				39,18	45,34		5. 7. 24,54	T.	
		Regulus.....	2,2	15,7	29,4	43,6	57,2	11,1	24,8	9. 59. 43,43				43,94	45,58		10. 0. 29,63	T.	
		(r) Egeria.....	....	....	12,8	....	....	....	11,0	11. 22. 27,50				28,04			11. 23. 13,83	T.	
	Flora.....	....	11,8	25,5	39,7	53,0	6,2	....	12. 5. 39,24				39,76			12. 6. 25,60	T.		
	(s) Arcturus.....	26,6	40,7	54,7	9,4	23,7	38,0	52,4	14. 8. 9,36				9,89	46,02		14. 8. 55,87	T.		
Apr. 22	☉ 1 L.....	34,7	48,4	2,3	16,2	30,2	44,0	57,7	1. 59. 16,22				16,73		1,57	2. 0. 3,44	T.		
	☉ 2 L.....	45,5	59,4	13,0	27,1	40,7	54,7	8,3	2. 1. 26,96				27,47			2. 2. 14,18	T.		
	(t) Regulus.....	....	14,2	27,8	41,8	55,6	9,4	....	9. 59. 41,76				42,27	47,23		10. 0. 29,51	T.		
	(u) β Leonis.....	....	....	29,3	43,3	57,6	11,5	25,3	11. 40. 43,46				43,96	47,35		11. 41. 31,30	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.

(a) Cloudy. The counting for this Limb was 1<sup>st</sup> fast. (b) Great motion. (c) No definition. (d) 'Counting 1<sup>st</sup> fast.' The correction has been applied to wires VI and VII. (e) Extremely faint. (f) 'The north-preceding and brighter of two.' The other is B. (w.) XIII. 445. (g) Bad definition. Wires V, VI, VII have been diminished 1<sup>st</sup>. (h) Cloudy. (i) 'The counting was 1<sup>st</sup> fast.' (k) Faint. (l) 'The counting was found to be 20<sup>th</sup> fast.' Correction applied. (m) Extremely faint, the atmosphere being thick. (n) 'The southern of two.' The other is B. (w.) X. 911. (o) These wires were considered good. (p) Interruption by clouds, and very bad definition. (q) Excessive motion. (r) These wires considered good: the others lost by mist on the eye-glass. (s) Badly defined and clouded. (t) Cloud. (u) Scarcely visible through cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
Apr. 22	(a) Spica. ....	....	....	23,2	37,2	50,7	4,4	18,2	13. 16. 37,08	0,9	+0,5	+7,0	37,79	47,43	1,57	13. 17. 25,24			T.
	(b) $\alpha$ Andromedæ ...	9,0	24,2	39,4	54,8	10,1	25,2	40,4	23. 59. 54,73				55,23	48,25	1,60	0. 0. 43,39			T.
Apr. 23	⊙ 1 L. ....	....	32,0	45,6	59,4	13,4	27,3	....	2. 2. 59,54				60,05			2. 3. 48,35			T.
	⊙ 2 L. ....	29,0	42,9	56,4	10,4	24,4	38,3	52,2	2. 5. 10,51				11,02			2. 5. 59,32			T.
	$\beta$ Tauri. ....	....	....	50,7	6,2	21,6	36,7	52,0	5. 16. 6,15				6,64	48,52		5. 16. 55,16			T.
	Egeria. ....	0,0	14,6	28,3	43,2	57,9	12,0	26,7	11. 21. 43,24				43,78			11. 22. 32,70			T.
	$\beta$ Leonis. ....	0,1	14,0	27,5	42,0	55,9	9,6	23,6	11. 40. 41,81				42,31	48,99		11. 41. 31,25			T.
	Flora. ....	....	....	9,8	23,8	37,5	51,3	4,7	12. 4. 23,81				24,33			12. 5. 13,30			T.
	$\beta$ Corvi. ....	....	....	....	48,8	3,4	17,9	32,5	12. 25. 48,78				49,59	48,83		12. 26. 38,58			T.
	Arcturus. ....	23,2	37,6	51,7	6,4	20,7	34,8	49,2	14. 8. 6,23				6,76	49,16		14. 8. 55,86			T.
	$\epsilon$ Bootis. ....	....	....	27,6	43,1	58,2	13,4	28,5	14. 37. 42,08				43,48	49,19		14. 38. 32,62			T.
	$\alpha^2$ Libræ. ....	11,4	25,4	39,4	53,5	7,4	21,2	35,2	14. 41. 53,36				54,12	49,00		14. 42. 43,26			T.
	(c) Polaris. ....	....	48,0	23,0	13,0	55,5	....	14,5	1. 4. 10,44				3,54		1,60				T.
Apr. 24	(d) ⊙ 1 L. ....	1,6	15,6	29,2	43,2	57,2	10,3	24,7	2. 6. 43,11				43,62			2. 7. 33,52			T.
	⊙ 2 L. ....	12,7	26,4	40,0	54,1	8,1	21,8	35,5	2. 8. 54,09				54,60			2. 9. 44,50			T.
	(e) Rigel. ....	....	....	....	....	47,3	1,0	14,6	5. 6. 33,75				34,45	50,04		5. 7. 24,55			T.
	$\beta$ Tauri. ....	18,4	33,8	49,0	4,4	19,8	35,0	50,4	5. 16. 4,40				4,89	50,26		5. 16. 55,00			T.
	$\alpha$ Orionis. ....	37,3	50,8	4,1	18,1	31,5	45,2	58,6	5. 46. 17,95				18,47	50,17		5. 47. 8,62			T.
	⊙ 1 L. ....	16,5	31,4	46,2	1,4	16,2	31,2	46,1	6. 9. 1,28				1,82			6. 9. 51,99			T.
	Sirius. ....	4,1	18,0	31,7	46,1	0,1	14,0	28,0	6. 37. 46,00				46,77	50,07		6. 38. 36,97			T.
	(f) Castor. ....	29,9	45,7	1,3	17,6	33,4	49,3	5,1	7. 24. 17,47				17,94	50,48		7. 25. 8,19			T.
	Procyon. ....	1,4	15,0	28,4	42,1	55,7	9,0	22,6	7. 30. 42,03				42,58	50,16		7. 31. 32,84			T.
	(g) Pollux. ....	38,1	....	....	....	39,2	54,4	9,7	7. 35. 23,86				24,36	50,29		7. 36. 14,63			T.
	Egeria. ....	....	53,8	8,6	23,7	37,8	52,2	....	11. 21. 23,22				23,75			11. 22. 14,27			T.
	Flora. ....	7,4	21,0	34,3	48,2	2,0	15,3	28,8	12. 3. 48,15				48,67			12. 4. 39,23			T.
	Spica. ....	53,1	6,6	20,2	34,1	47,7	1,3	15,0	13. 16. 34,00				34,71	50,52		13. 17. 25,35			T.
Apr. 25	$\alpha$ Andromedæ. ....	4,3	19,4	34,7	50,1	5,4	20,7	35,9	23. 59. 50,07				50,53	53,02	1,55	0. 0. 43,46			T.
	(h) Polaris. ....	....	....	....	10,5	53,0	28,0	12,0	1. 4. 8,76			0,0	1,13			1. 4. 54,13			T.
Apr. 26	(i) ⊙ 1 L. ....	30,2	43,6	57,3	11,7	25,7	39,6	53,5	2. 14. 11,65				12,11			2. 15. 5,19			T.
	⊙ 2 L. ....	41,6	55,4	9,2	23,4	37,4	51,2	5,2	2. 16. 23,34				23,80			2. 17. 16,88			T.
	Aldebaran. ....	48,7	2,8	16,7	30,9	44,8	58,9	12,9	4. 26. 30,81				31,28	53,38		4. 27. 24,50			T.
	⊙ 1 L. ....	22,0	37,0	51,6	6,6	21,4	36,4	51,3	8. 5. 6,62				7,12			8. 6. 0,57			T.
	$\alpha$ Hydræ. ....	44,2	57,5	11,2	24,9	38,6	52,1	5,6	9. 19. 24,87				25,53	53,50		9. 20. 19,06			T.
	(j) Egeria. ....	5,2	19,4	33,9	49,0	3,1	17,5	31,9	11. 20. 48,57				49,07			11. 21. 42,73			T.
	B. (w.) XI. 568 ..	10,0	23,4	36,8	50,3	3,9	17,2	30,9	11. 31. 50,35				50,97			11. 32. 44,65			T.
	B. (w.) XI. 632 ..	30,0	43,6	56,8	10,8	24,6	38,0	51,5	11. 35. 10,75				11,24			11. 36. 4,92			T.
	B. (w.) XI. 679 ..	10,9	24,2	37,7	51,4	4,8	18,3	31,8	11. 37. 51,30				51,80			11. 38. 45,48			T.
	$\beta$ Leonis. ....	55,3	9,1	23,0	37,2	51,1	5,1	18,9	11. 40. 37,10				37,56	53,72		11. 41. 31,25			T.
	B. (w.) XI. 787 ..	9,2	22,8	36,2	50,0	3,5	16,9	30,3	11. 44. 49,84				50,34			11. 45. 44,03			T.
	B. (w.) XI. 836 ..	21,1	34,4	47,8	1,6	15,2	28,7	42,1	11. 48. 1,55				2,06			11. 48. 55,75			T.
	(k) B. (w.) XI. 895 ..	26,2	39,4	52,8	6,6	20,0	33,2	46,7	11. 51. 6,42				7,03			11. 52. 0,73			T.
	B. (w.) XI. 959 ..	23,7	37,1	50,2	4,1	17,5	31,0	44,4	11. 55. 4,00				4,62			11. 55. 58,32			T.
	B. (w.) XI. 998 ..	46,7	0,0	13,2	26,8	40,2	53,9	7,2	11. 57. 26,86				27,48			11. 58. 21,18			T.
	Flora. ....	....	14,0	27,2	41,0	55,0	8,6	....	12. 2. 41,16				41,64			12. 3. 35,35			T.
	$\beta$ Corvi. ....	0,4	14,7	29,3	44,1	58,7	13,2	27,7	12. 25. 44,01				44,79	53,62		12. 26. 38,52			T.
	Polaris SP. ....	....	27,5	....	....	39,0	14,0	53,0	13. 3. 51,43				60,67			13. 4. 54,44			T.
	Spica. ....	49,7	3,4	17,0	31,0	44,6	58,2	11,9	13. 16. 30,82				31,50	53,73		13. 17. 25,29			T.
	$\epsilon$ Bootis. ....	52,7	8,0	23,1	38,5	53,6	8,6	24,0	14. 37. 38,36				38,82	53,88		14. 38. 32,69			T.
	(l) $\alpha^2$ Libræ. ....	6,8	20,9	34,6	48,7	2,6	16,8	30,2	14. 41. 48,66				49,40	53,76		14. 42. 43,28			T.
Apr. 27	⊙ 1 L. ....	12,0	26,4	41,0	55,9	10,4	25,1	39,7	9. 3. 55,79				56,28		1,52	9. 4. 51,33			T.
	$\alpha$ Hydræ. ....	42,7	56,2	9,7	23,6	37,1	50,7	4,0	9. 19. 23,43				24,09	54,93		9. 20. 19,15			T.
	$\nu$ Leonis. ....	38,7	52,6	6,1	20,2	34,0	47,8	1,6	9. 49. 20,14				20,61			9. 50. 15,70			T.
	$\eta$ Leonis. ....	....	52,0	5,9	20,2	34,3	48,5	....	9. 58. 20,18				20,66			9. 59. 15,76			T.
	Regulus. ....	....	....	....	33,8	47,6	1,6	15,2	9. 59. 33,85				34,32	55,12		10. 0. 29,42			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40', 317, - 26', 873, - 13', 601, + 0', 041, + 13', 535, + 26', 886, + 40', 328.

(a) Faint from cloud. (b) 'The counting was 1<sup>s</sup> slow.' (c) This observation was considered good. (d) Between wires III and IV the observer accidentally struck the Telescope on the East side. (e) Not seen earlier from its faintness. (f) Cloud. (g) Interruption by clouds. (h) Great unsteadiness. (i) Very faint. (k) 'Counting 1<sup>s</sup> fast.' Correction applied. (l) Clouded and unsteady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Apr. 27	(a) B. (w.) x. 411....	42,9	56,4	9,7	23,6	37,1	50,7	4,1	10. 22. 23,50	+0,9	0,0	+6,8	24,01		1,52	10. 23. 19,14	T.		
	B. (w.) x. 474....	25,2	38,7	52,6	6,6	20,2	34,0	47,8	10. 26. 6,44				6,91			10. 27. 2,04	T.		
	(b) B. (w.) x. 552....	9,4	22,8	36,2	50,0	3,6	16,9	30,6	10. 29. 49,92				50,42			10. 30. 45,55	T.		
	B. (w.) x. 603....	14,2	28,0	41,7	55,9	9,6	23,5	37,2	10. 32. 55,73				56,19			10. 33. 51,33	T.		
	(c) B. (w.) x. 661....	30,0	43,6	56,9	10,8	24,2	37,5	51,2	10. 36. 10,60				11,10			10. 37. 6,24	T.		
	Egeria .....	50,3	4,8	19,0	34,0	48,3	2,7	16,9	11. 20. 33,71				34,21			11. 21. 29,40	T.		
	$\beta$ Leonis .....	53,6	7,7	21,6	35,6	49,6	3,5	17,4	11. 40. 35,57				36,03	55,24		11. 41. 31,24	T.		
	B. xi. 944 .....	24,6	38,1	51,6	5,6	19,1	32,6	....	11. 54. 5,40				5,88			11. 55. 1,10	T.		
	(d) Thetis .....	6,7	20,0	33,4	....	1,2	14,8	28,2	11. 56. 47,39				47,87			11. 57. 43,10	T.		
	(e) Flora .....	29,6	42,8	56,7	10,2	23,9	37,7	51,2	12. 2. 10,30				10,78			12. 3. 6,01	T.		
	(f) Arcturus .....	17,2	31,3	45,4	0,2	14,5	28,6	43,1	14. 8. 0,04				0,53	55,41		14. 8. 55,90	T.		
	$\epsilon$ Bootis .....	51,2	6,3	21,1	36,7	52,0	7,1	22,5	14. 37. 36,70				37,16	55,55		14. 38. 32,56	T.		
	$\alpha^2$ Libræ .....	5,2	19,1	33,0	47,1	1,1	15,1	29,1	14. 41. 47,10				47,84	55,33		14. 42. 43,24	T.		
May 1	(g) $\odot$ 1 L. ....	....	35,2	....	3,4	17,2	31,1	....	2. 33. 3,20			+6,6	3,66		1,50	2. 34. 4,00	T.		
	(h) $\odot$ 2 L. ....	33,6	47,2	....	....	....	....	57,2	2. 35. 15,31				15,77			2. 36. 16,11	T.		
	(i) $\alpha$ Hydræ .....	....	....	....	17,8	31,2	44,7	58,6	9. 19. 17,68				18,33	60,63		9. 20. 19,09	T.		
	Regulus .....	46,7	0,6	14,2	28,2	41,9	55,7	9,3	9. 59. 28,09				28,55	60,84		10. 0. 29,36	T.		
	(d) Egeria .....	10,7	....	37,8	52,0	....	....	35,0	11. 19. 52,49				52,97			11. 20. 53,86	T.		
	$\beta$ Leonis .....	48,0	1,9	15,6	29,8	43,9	57,7	11,4	11. 40. 29,76				30,21	61,03		11. 41. 31,12	T.		
	(i) Flora .....	41,3	54,2	....	22,3	36,0	49,7	....	12. 0. 22,11				22,58			12. 1. 23,51	T.		
	$\eta$ Virginis .....	39,2	52,5	5,7	19,4	32,9	46,4	59,7	12. 11. 19,40				19,98			12. 12. 20,92	T.		
	(k) $\gamma$ Virginis .....	....	....	55,7	9,2	22,6	36,3	49,7	12. 33. 9,26				9,85			12. 34. 10,82	T.		
	$\delta$ 1 L. ....	28,4	42,2	55,6	10,0	23,9	37,6	51,6	12. 54. 9,90				10,50			12. 55. 11,49	T.		
	$\alpha^2$ Libræ .....	59,6	13,6	27,4	41,5	55,5	9,4	23,3	14. 41. 41,47				42,20	61,01		14. 42. 43,30	T.		
	$\alpha$ Coronæ .....	39,6	54,8	9,8	25,2	40,1	55,2	10,3	15. 27. 25,00				25,47	61,23		15. 28. 26,61	T.		
	H. C. 28560 .....	37,5	52,2	6,6	21,7	36,1	50,6	5,1	15. 32. 21,40				22,17			15. 33. 23,32	T.		
$\alpha$ Serpentis .....	17,8	31,2	44,7	58,7	12,1	25,3	39,1	15. 35. 58,42				58,91	61,13		15. 37. 0,07	T.			
May 3	(l) $\odot$ 1 L. ....	57,2	11,0	25,0	38,8	53,1	7,2	21,2	2. 40. 39,08			-0,2	39,53		1,60	2. 41. 42,92	T.		
	(m) $\odot$ 2 L. ....	9,2	23,1	37,2	....	5,4	19,4	33,7	2. 42. 51,34				51,79			2. 43. 55,18	T.		
	(n) B. (w.) x. 938 ...	11,2	24,7	38,1	51,7	5,1	18,7	32,2	10. 50. 51,67				52,17			10. 51. 56,10	T.		
	$\chi$ Leonis .....	38,4	51,7	5,4	19,2	32,7	46,2	59,8	10. 56. 19,06				19,53			10. 57. 23,47	T.		
	B. (w.) x. 1075 ..	44,4	58,0	11,7	25,7	39,4	53,0	6,7	10. 58. 25,56				26,01			10. 59. 29,95	T.		
	B. (w.) xi. 18....	44,7	58,1	11,7	25,3	38,5	51,9	5,6	11. 1. 25,11				25,70			11. 2. 29,64	T.		
	$\delta$ Leonis .....	26,7	41,2	55,4	10,1	24,7	38,7	53,4	11. 5. 10,02				10,50	64,02		11. 6. 14,45	T.		
	(o) B. (w.) xi. 149 ..	45,7	59,3	12,8	26,6	40,2	53,7	7,2	11. 8. 26,50				26,98			11. 9. 30,93	T.		
	B.A.C. 3871.....	51,8	5,3	18,7	32,7	46,0	59,6	13,1	11. 14. 32,45				32,93			11. 15. 36,89	T.		
	(p) Egeria .....	58,2	....	27,6	....	56,1	....	25,0	11. 19. 41,74				42,21			11. 20. 46,18	T.		
	Flora .....	56,9	10,4	23,9	37,8	51,4	4,6	18,2	11. 59. 37,60				38,06			12. 0. 42,07	T.		
	Spica .....	39,4	53,2	6,6	20,5	34,5	48,0	1,6	13. 16. 20,54				21,20	64,04		13. 17. 25,30	T.		
	(q) Arcturus .....	8,4	22,9	36,6	51,3	5,7	20,1	34,1	14. 7. 51,30				51,77	64,20		14. 8. 55,92	T.		
(r) $\epsilon$ Bootis .....	42,7	57,7	12,8	28,2	43,3	58,4	13,6	14. 37. 28,10				28,54	64,21		14. 38. 32,72	T.			
May 4	(m)(s) $\alpha^2$ Libræ .....	56,4	10,5	24,6	38,7	52,4	6,2	20,2	14. 41. 38,43				39,15	64,08		14. 42. 43,34	T.		
	$\xi^2$ Libræ .....	....	13,2	27,1	41,3	55,0	8,2	....	14. 47. 40,97				41,63			14. 48. 45,83	T.		
	(t) $\delta$ 1 L. ....	47,2	1,6	15,6	30,2	44,2	58,6	12,9	14. 51. 30,04				30,73			14. 52. 34,93	T.		
	$\delta$ 2 L. ....	9,2	23,4	37,6	52,1	6,2	20,6	34,8	14. 53. 51,98				52,67			14. 54. 56,87	T.		
	(u) $\alpha$ Coronæ .....	36,7	51,7	6,7	22,0	37,2	52,2	7,3	15. 27. 21,97				22,43	64,29		15. 28. 26,67	T.		
	(x) $\eta$ Libræ .....	59,8	13,6	27,6	41,6	55,8	9,6	23,5	15. 34. 41,64				42,36			15. 35. 46,61	T.		
	(x) $\theta$ Libræ .....	38,6	52,7	6,4	20,8	34,8	48,8	2,7	15. 44. 20,68				21,41			15. 45. 25,67	T.		
	(m) $\odot$ 1 L. ....	....	0,0	13,7	....	....	56,0	9,6	2. 44. 27,85				28,30		1,72	2. 45. 33,28	T.		
	$\odot$ 2 L. ....	....	....	....	....	54,4	8,3	22,6	2. 46. 40,34				40,79			2. 47. 45,77	T.		
	$\delta$ Leonis .....	25,2	39,7	53,8	8,7	23,0	37,2	51,5	11. 5. 8,45				8,93	65,58		11. 6. 14,50	T.		
	(y) Egeria .....	....	10,0	....	....	53,1	7,7	....	11. 19. 38,80				39,27			11. 20. 44,86	T.		
	(m) Flora .....	36,7	50,0	....	18,0	31,0	....	....	11. 59. 17,51				17,97			12. 0. 23,61	T.		
	$\beta$ Corvi .....	48,2	3,1	17,4	32,2	46,7	1,2	15,7	12. 25. 32,07				32,83	65,55		12. 26. 38,50	T.		
Polaris SP.....	37,5	16,0	58,5	....	....	0,0	....	13. 3. 39,48				48,80			13. 4. 54,52	T.			
Spica .....	37,8	51,6	5,1	18,8	32,5	46,3	0,1	13. 16. 18,89				19,55	65,69		13. 17. 25,28	T.			

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40<sup>s</sup>.317, - 26<sup>s</sup>.873, - 13<sup>s</sup>.601, + 0<sup>s</sup>.041, + 13<sup>s</sup>.535, + 26<sup>s</sup>.886, + 40<sup>s</sup>.328.

(a) 'The star entered high in the field.' The setting-angle was calculated from H. C. 20376. (b) Corrected by +30<sup>s</sup> for error of counting. (c) Disturbance. The counting being found 1<sup>s</sup> slow, wire VII has been increased 1<sup>s</sup>. (d) Extremely faint. (e) 'A fainter object north-preceding by about 6<sup>s</sup>.' (f) Flaring. (g) Dense clouds: 2 L without the dark glass. (h) Hid by cloud. (i) 'Good.' (j) 'No definition at all.' The observer was delayed at the Northumberland Dome. (k) 'Very great motion made the observation uncertain.' (l) Cloudy. (m) Strong day-light. (n) Faint. (p) 'Good observation: counting 1<sup>s</sup> fast.' Correction applied. (q) Flaring and of no definition. (r) Bad image. (s) Great motion. (t) 'Not quite full.' (u) 'Counting 1<sup>s</sup> fast.' Wire III has been diminished 1<sup>s</sup>, the others 1<sup>s</sup>. (x) Irregular motion and no definition. The temperature was low and the night throughout bad for observing. (y) Extremely faint: these wires were thought to be good.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
May 4	$\epsilon$ Bootis.....	....	....	10,8	26,4	41,6	57,0	11,6	14. 37. 26,30	+0,9	-0,2	+6,6	26,74	66,01	1,72	14. 38. 32,57			T.
	(a) $\alpha^2$ Libræ.....	55,1	9,1	22,5	36,8	50,7	4,6	18,6	14. 41. 36,77				37,49	65,75		14. 42. 43,32			T.
	$\alpha$ Coronæ.....	35,0	50,2	5,0	20,4	35,3	50,6	5,7	15. 27. 20,31				20,77	65,96		15. 28. 26,66			T.
	(b) $\eta$ Libræ.....	....	12,0	25,8	39,8	54,1	8,1	....	15. 34. 39,96				40,68			15. 35. 46,58			T.
	$\theta$ Libræ.....	37,2	51,2	4,7	19,2	33,2	47,2	1,1	15. 44. 19,12				19,85			15. 45. 25,76			T.
	) 2 L.....	18,2	32,7	47,1	1,9	16,6	31,0	45,7	15. 55. 1,88				2,61			15. 56. 8,53			T.
May 5	(c) Regulus.....	40,3	54,1	7,3	21,7	35,4	49,1	3,0	9. 59. 21,55				22,00	67,33	1,67	10. 0. 29,31			T.
	$\delta$ Leonis.....	23,2	37,7	52,1	6,4	21,2	35,4	50,0	11. 5. 6,57				7,05	67,44		11. 6. 14,43			T.
	(d) Egeria.....	....	....	....	....	....	7,2	....	11. 19. 38,66				39,13			11. 20. 46,53			T.
	(e)(f) $\beta$ Leonis.....	....	55,6	9,3	....	....	....	5,3	11. 40. 23,45				23,89	67,32		11. 41. 31,31			T.
	Arcturus.....	5,1	19,3	33,4	48,0	2,5	16,7	30,7	14. 7. 47,96				48,43	67,54		14. 8. 56,03			T.
	$\alpha$ Coronæ.....	33,2	48,2	3,2	....	33,5	48,8	4,0	15. 27. 13,49				18,95	67,80		15. 28. 26,63			T.
	$\alpha$ Serpentis.....	11,2	25,1	38,2	52,1	5,6	19,0	32,7	15. 35. 51,98				52,46	67,64		15. 37. 0,16			T.
May 6	$\beta$ Leonis.....	39,7	53,8	7,6	21,6	35,7	49,7	3,4	11. 40. 21,64				22,08	69,12	1,54	11. 41. 31,05			T.
	(e) Flora.....	0,6	14,6	....	....	....	....	....	11. 58. 41,62				42,08			11. 59. 51,07			T.
	(e)(g) $\beta$ Corvi.....	45,0	59,6	14,0	28,9	43,3	57,8	12,4	12. 25. 28,72				29,48	68,89		12. 26. 38,50			T.
	(e) Spica.....	....	....	1,8	15,6	29,2	....	....	13. 16. 15,54				16,20	69,04		13. 17. 25,27			T.
	(h) Polaris.....	50,5	36,5	10,0	54,0	36,0	14,0	....	1. 3. 53,82				46,08		1,62	1. 4. 55,87			T.
May 7	(i) $\odot$ 1 L.....	....	28,2	42,2	56,7	10,7	24,7	....	2. 55. 56,50				56,97			2. 57. 6,89			T.
	$\odot$ 2 L.....	27,6	41,7	55,7	9,8	24,2	38,2	58,3	2. 58. 9,93				10,40			2. 59. 20,32			T.
	$\alpha$ Orionis.....	17,3	30,7	44,2	58,0	11,7	25,1	38,6	5. 45. 57,95				58,42	70,11					T.
May 8	Spica.....	31,2	45,2	58,4	12,3	26,1	39,6	53,2	13. 16. 12,28			-0,5	12,93	72,31	1,54	13. 17. 25,31			T.
	Arcturus.....	0,2	14,3	28,5	43,2	57,3	11,5	26,1	14. 7. 43,01				43,46	72,52		14. 8. 55,90			T.
	$\epsilon$ Bootis.....	34,2	....	4,3	20,0	35,1	50,2	5,4	14. 37. 19,81				20,23	72,55		14. 38. 32,70			T.
	$\alpha^2$ Libræ.....	48,4	2,2	16,1	30,2	44,3	58,1	12,0	14. 41. 30,18				30,89	72,38		14. 42. 43,36			T.
May 11	(e) $\beta$ Corvi.....	37,4	52,0	6,2	21,3	35,7	50,2	4,9	12. 25. 21,10			+5,8	21,80	76,54	1,36	12. 26. 38,38			T.
	Arcturus.....	56,0	10,2	24,3	38,9	53,2	7,3	21,6	14. 7. 38,79				39,21	76,78		14. 8. 55,89			T.
	$\alpha^2$ Libræ.....	44,2	58,2	11,6	26,1	40,0	53,9	7,8	14. 41. 25,97				26,63	76,66		14. 42. 43,34			T.
May 12	$\beta$ Corvi.....	36,1	50,7	5,1	20,0	34,4	48,8	3,4	12. 25. 19,78				20,48	77,85	1,39	12. 26. 38,40			T.
	Arcturus.....	....	....	....	....	51,7	6,1	20,3	14. 7. 37,40				37,82	78,17		14. 8. 55,84			T.
	(e) $\alpha^2$ Libræ.....	42,7	56,7	10,7	24,7	38,7	52,6	6,6	14. 41. 24,67				25,33	77,97		14. 42. 43,38			T.
	(e)(k) $\gamma$ Serpentis....	24,6	38,2	51,7	5,7	19,7	33,2	47,1	15. 14. 5,74				6,14			15. 15. 24,22			T.
	(e) $\tau^1$ Serpentis.....	56,6	10,7	24,7	38,6	52,7	6,4	20,6	15. 17. 38,62				39,02			15. 18. 57,11			T.
	(e)(k) $\tau^2$ Serpentis....	21,3	35,3	49,2	3,4	17,4	31,4	45,6	15. 24. 3,37				3,78			15. 25. 21,87			T.
	$\alpha$ Coronæ.....	22,9	38,0	53,1	8,4	23,5	38,6	53,6	15. 27. 8,30				8,71	78,10		15. 28. 26,81			T.
	(l) $\alpha$ Serpentis.....	1,0	14,6	28,0	41,6	55,2	8,7	22,3	15. 35. 41,63				42,05	78,13		15. 37. 0,15			T.
May 14	$\beta$ Leonis.....	28,1	41,9	55,7	10,0	23,8	37,9	51,6	11. 40. 9,85				10,25	80,88	1,48	11. 41. 31,10			T.
	(m) B. (w.) XII. 121..	28,8	42,0	55,4	9,2	22,9	36,2	50,0	12. 7. 9,22				9,80			12. 8. 30,68			T.
	B. (w.) XII. 178..	37,6	51,2	4,3	18,1	31,6	45,0	58,4	12. 10. 18,03				18,57			12. 11. 39,45			T.
	B. (w.) XII. 249..	18,9	32,2	45,7	59,4	13,0	26,2	39,9	12. 13. 59,33				59,90			12. 15. 20,78			T.
	(n) B. (w.) XIV. 520..	34,9	48,7	2,1	16,0	30,1	43,7	57,5	14. 27. 16,14				16,76			14. 28. 37,78			T.
	B. (w.) XIV. 577..	32,9	46,4	0,7	14,4	28,2	42,1	56,0	14. 30. 14,39				15,03			14. 31. 36,06			T.
	H. C. 26746.....	8,4	22,9	37,1	51,7	6,2	20,3	34,7	14. 32. 51,61				52,30			14. 34. 13,33			T.
	$\epsilon$ Bootis.....	25,7	41,0	56,0	11,4	26,5	41,7	56,8	14. 37. 11,30				11,70	81,10		14. 38. 32,73			T.
	$\alpha^2$ Libræ.....	39,9	53,8	7,6	21,9	35,8	49,7	3,4	14. 41. 21,72				22,38	80,93		14. 42. 43,42			T.
	(o) Polaris.....	....	26,0	4,0	51,5	32,0	..	49,5	1. 3. 48,34				41,20		1,47	1. 5. 2,87			T.
May 15	(p) $\odot$ 1 L.....	20,4	34,9	49,1	3,2	17,7	32,0	46,2	3. 27. 3,36				3,78			3. 28. 25,60			T.
	$\odot$ 2 L.....	35,0	49,2	3,4	17,7	32,1	46,2	0,7	3. 29. 17,76				18,18			3. 30. 40,00			T.
	B.A.C. 4225.....	59,8	13,3	26,6	40,2	53,8	7,2	20,7	12. 22. 40,22				40,79			12. 24. 3,16			T.
	$\beta$ Corvi.....	31,7	46,1	0,7	15,2	30,0	44,6	59,1	12. 25. 15,34				16,04	82,27		12. 26. 38,41			T.
	B. (w.) XII. 490..	27,2	40,3	54,0	7,6	21,2	34,6	48,1	12. 28. 7,57				8,10			12. 29. 30,47			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,317$ ,  $-26^s,873$ ,  $-13^s,601$ ,  $+0^s,041$ ,  $+13^s,535$ ,  $+26^s,886$ ,  $+40^s,328$ .

(a) Corrected by  $+5^s$  for error of counting. (b) 'Counting 1<sup>s</sup> slow.' All except wire II have been increased 1<sup>s</sup>. (c) Distraction by noise. (d) Too faint for more wires. (e) Cloudy. (f) Wire III was set down 19,3. (g) Faint at times. (h) Great unsteadiness: some wires quite doubtful. (i) 'Vibrating very much.' (j) Faint. (k) After this the sky was quite cloudy. (l) 'The north-preceding star.' The other is B. (w.) XII. 120. (m) The noted time has been diminished by 1<sup>m</sup>. (n) Beautifully steady: interruption by clouds. (o) 'Counting 1<sup>s</sup> fast.' Correction applied.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Aimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
May 15	B. (w.) XII. 563..	46,4	59,8	13,1	26,8	40,2	53,9	7,4	12.32.26,80	+0,9	-0,5	+5,8	27,35		1,47	12.33.49,73	T.		
	B. (w.) XII. 621..	40,0	53,7	7,1	21,2	35,0	48,4	2,0	12.35.21,05				21,65			12.36.44,03	T.		
	B. (w.) XII. 677..	51,7	4,8	18,2	32,1	45,7	59,1	12,7	12.38.32,04				32,61			12.39.55,00	T.		
	(a) B. (w.) XII. 730..	48,2	1,9	15,2	28,7	42,8	56,1	9,8	12.41.28,96				29,54			12.42.51,93	T.		
	Polaris SP.....	....	12,0	48,0	30,5	17,0	54,0	....	13.3.32,22				40,83			13.5.3,24	T.		
	Spica.....	21,2	35,0	48,3	2,2	16,1	29,5	43,3	13.16.2,23				2,84	82,38		13.17.25,26	T.		
	Arcturus.....	50,2	4,2	18,2	33,2	47,4	1,7	16,0	14.7.32,98				33,40	82,59		14.8.55,88	T.		
	(b)(c) Bootis.....	....	....	....	10,0	25,2	40,2	55,4	14.37.9,89				10,29	82,51		14.38.32,80	T.		
	α Libræ.....	38,7	52,4	6,2	20,2	34,4	48,2	2,1	14.41.20,31				20,97	82,35		14.42.43,48	T.		
	(b) B. (w.) XIV. 891..	18,2	32,7	....	....	14,8	....	....	14.46.0,39				1,05			14.47.23,57	T.		
	(b) 17 Libræ.....	9,8	23,3	....	51,0	4,8	....	....	14.48.50,86				51,47			14.50.13,99	T.		
	(b) α Coronæ.....	18,1	33,5	48,6	....	....	....	....	15.27.3,68				4,09	82,74		15.28.26,64	T.		
May 17	(b) β Leonis.....	....	37,7	51,3	5,3	19,6	33,4	....	11.40.5,46		-0,8		5,84	85,26	1,34		T.		
May 18	⊙ 1 L.....	10,0	24,4	38,4	53,0	7,4	21,3	35,7	3.38.52,88				53,29		1,27	3.40.19,26	T.		
	⊙ 2 L.....	24,8	39,0	53,2	7,8	22,1	36,2	50,6	3.41.7,67				8,08			3.42.34,06	T.		
May 19	(b) ⊙ 1 L.....	7,4	22,1	36,1	50,9	5,2	19,4	33,7	3.42.50,68				51,09		1,20	3.44.18,33	T.		
	(d) ⊙ 2 L.....	22,5	37,1	51,2	5,7	20,0	34,2	48,8	3.45.5,64				6,05			3.46.33,29	T.		
	(b) Aldebaran.....	....	....	....	57,1	11,0	24,9	....	4.25.56,96				57,35	87,34		4.27.24,62	T.		
	α Orionis.....	0,1	13,6	27,0	40,7	54,3	7,7	21,5	5.45.40,70				41,11	87,37		5.47.8,45	T.		
	β Corvi.....	26,2	40,7	55,2	10,0	24,6	39,1	53,8	12.25.9,94				10,63	87,65		12.26.38,30	T.		
	B. (w.) XII. 772..	13,7	27,0	40,2	54,2	7,2	20,7	34,2	12.43.53,89				54,43			12.45.22,12	T.		
	H. C. 24624.....	52,1	5,6	18,8	32,7	46,3	59,5	13,0	13.7.32,57				33,13			13.9.0,84	T.		
	B. (w.) XIII. 206.	34,0	47,3	1,2	15,0	28,8	42,2	56,0	13.11.14,93				15,52			13.12.43,23	T.		
	B. (w.) XIII. 245.	56,1	9,5	23,1	36,8	50,3	3,7	17,0	13.13.36,64				37,20			13.15.4,91	T.		
	Spica.....	15,9	29,7	43,2	57,2	10,7	24,2	33,0	13.15.56,99				57,59	87,62		13.17.25,30	T.		
	(e) B. (w.) XIII. 391.	53,4	7,2	20,7	34,4	48,1	1,7	15,2	13.22.34,39				34,98			13.24.2,70	T.		
	(f) B. (w.) XIII. 440.	27,2	41,2	54,9	8,9	22,4	36,4	50,2	13.25.8,75				9,38			13.26.37,10	T.		
	H. C. 25180.....	25,1	38,6	....	5,8	19,7	33,1	46,6	13.29.5,86				6,45			13.30.34,18	T.		
	B. (w.) XIII. 572.	13,2	27,0	40,6	54,6	8,2	21,8	35,4	13.31.54,40				55,00			13.33.22,73	T.		
	(g) B. (w.) XIII. 620.	50,1	3,1	17,1	30,8	44,4	57,8	11,2	13.34.30,64				31,20			13.35.58,93	T.		
	B. (w.) XIII. 674.	....	34,1	47,7	1,9	15,6	29,2	....	13.38.1,70				2,31			13.39.30,04	T.		
	B. (w.) XIII. 752.	35,8	49,3	2,8	16,3	30,0	43,4	57,0	13.42.16,37				16,94			13.43.44,68	T.		
	B. (w.) XIII. 789.	19,2	33,0	46,1	0,0	13,3	27,0	40,1	13.44.59,81				60,37			13.46.28,11	T.		
	B. (w.) XIII. 870.	30,2	43,9	57,2	11,0	24,5	38,0	51,6	13.49.10,91				11,47			13.50.39,21	T.		
	B. (w.) XIII. 916.	9,0	22,6	36,1	50,0	3,8	17,6	31,1	13.51.50,01				50,61			13.53.18,35	T.		
	ε Bootis.....	19,0	34,1	49,2	4,6	19,9	35,0	50,2	14.37.4,57				4,94	87,87		14.38.32,72	T.		
	α Libræ.....	33,2	47,2	0,8	15,2	29,0	42,8	57,0	14.41.15,03				15,68	87,65		14.42.43,46	T.		
	(h) B.A.C. 5383.....	13,7	27,6	41,7	56,1	10,4	24,3	38,7	16.1.56,07				56,74			16.3.24,59	T.		
	δ Ophiuchi.....	28,1	41,6	55,2	8,7	22,2	35,5	49,1	16.5.8,63				9,17	87,88		16.6.37,02	T.		
	H. C. 29677.....	48,1	2,1	16,1	30,3	44,7	58,6	12,3	16.8.30,31				30,97			16.9.58,83	T.		
	H. C. 29740.....	....	35,2	....	4,1	18,2	32,5	46,7	16.11.3,89				4,57			16.12.32,43	T.		
	ψ Ophiuchi.....	17,2	31,5	45,3	0,1	14,3	28,6	42,7	16.13.59,91				60,59			16.15.28,45	T.		
	(i) Antares.....	8,4	23,4	38,3	53,6	8,4	23,4	38,2	16.18.53,38				54,10	87,92		16.20.21,97	T.		
	(k) Metis.....	46,2	0,7	....	....	45,3	59,7	....	17.7.30,25				30,95			17.8.58,86	T.		
	H. C. 31488.....	24,0	38,6	53,0	7,9	22,7	37,0	51,6	17.11.7,83				8,53			17.12.36,44	T.		
May 24	(l) ⊙ 1 L.....	....	18,1	32,0	47,1	1,7	16,0	....	4.3.46,98								B.		
	⊙ 2 L.....	19,6	34,0	48,0	2,9	17,2	31,7	46,0	4.6.2,77								B.		
May 31	(m) ⊙ 1 L.....	31,4	46,0	0,0	14,7	29,0	43,4	58,0	15.22.14,64	+1,3	-0,8	+5,3	15,29		1,48	15.23.1,07	B.		
	α Coronæ.....	55,1	10,1	25,2	40,6	56,0	10,9	26,0	15.27.40,55				40,95	45,95		15.28.26,73	B.		
	α Serpentis.....	33,7	47,0	0,4	14,2	28,0	41,2	55,0	15.36.14,21				14,62	45,69		15.37.0,41	B.		
	β Scorpil.....	....	37,1	51,0	5,7	19,9	34,1	....	15.56.5,56				6,23			15.56.52,04	B.		
	ν Scorpil.....	56,3	10,8	24,8	39,0	53,5	7,7	22,0	16.2.39,16				39,83			16.3.25,65	B.		
	(n) δ Ophiuchi.....	10,2	23,9	37,3	50,8	4,5	18,1	31,3	16.5.50,87				51,41	45,76		16.6.37,23	B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

May 20, 2<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) 'The south-following of two.' (b) Cloudy. (c) Corrected by -1<sup>s</sup> for error of counting. (d) Wire III, taken without the dark glass, was written down 50,2. (e) Wire I was written down 3,4. (f) 'The north-preceding of two.' (g) Very faint from cloud. (h) The companion to ν Scorpil. (i) Diffused. (k) Extremely faint. The noted time has been diminished by 1<sup>m</sup>. (l) Cloudy: 1 L partly without the dark glass. This observation is retained only for a measure of the diameter, no clock-stars having been observed on account of continuous cloudy weather. (m) Clouded and uneven. (n) Afterwards cloudy.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
June 1	(a) $\odot$ 1 L.....	....	....	....	5,0	19,9	34,4	48,7	4.36.51,14	+1,3	-0,8	+5,3	5,55		1,53	4.36.52,12			B.
	$\odot$ 2 L.....	38,0	52,8	7,1	22,0	36,4	51,2	5,5	4.38.21,85				22,26			4.39.8,83			B.
	(b) Spica.....	56,3	10,1	23,7	37,6	51,3	4,7	18,3	13.16.37,43				38,02	47,13					B.
June 4	$\odot$ 2 L.....	52,0	6,1	20,8	35,6	50,4	5,0	19,4	4.50.35,62				36,03		1,61	4.51.27,48			B.
	Polaris SP.....	....	55,8	35,0	....	2,5	35,8	....	13.4.16,78				24,15						B.
	Arcturus.....	20,3	34,7	49,0	3,6	17,8	32,0	46,1	14.8.3,36				3,77	52,16		14.8.55,85			B.
	(c) B. (w.) XIV. 241..	21,1	35,3	48,8	3,0	16,4	30,3	44,1	14.13.2,71				3,34			14.13.55,42			B.
	$\epsilon$ Bootis.....	54,6	9,8	24,9	40,2	55,6	10,7	25,8	14.37.40,22				40,61	52,17		14.38.32,72			B.
	$\alpha^2$ Libræ.....	8,8	22,8	36,5	50,6	4,8	18,7	32,5	14.41.50,67				51,32	52,04		14.42.43,44			B.
	H. C. 28453.....	43,7	57,6	11,3	26,0	40,1	54,0	8,0	15.29.25,82				26,48			15.30.18,65			B.
	$\alpha$ Serpentis.....	27,2	40,6	54,0	7,8	21,2	34,8	48,2	15.36.7,69				8,10	52,23		15.37.0,28			B.
	H. C. 28901.....	51,1	5,2	19,2	34,0	48,1	2,2	16,2	15.44.33,71				34,37			15.45.26,56			B.
	(d) Antares.....	44,2	59,2	14,0	29,2	44,2	59,0	14,1	16.19.29,13				29,84	52,38		16.20.22,06			B.
	(e) Metis.....	57,4	12,0	26,2	41,7	56,8	10,9	25,4	16.51.41,48				42,18			16.52.34,44			B.
June 8	Arcturus.....	14,2	28,2	42,6	57,3	11,4	25,7	40,0	14.7.57,06		-1,0		57,46	58,46	1,50	14.8.55,90			B.
	(f) Metis.....	....	....	2,3	....	....	46,5	1,4	16.47.17,25				17,94			16.48.16,54			B.
	$\alpha$ Herculis.....	15,3	29,1	42,6	56,8	10,8	24,6	38,3	17.6.56,79				57,17	58,54		17.7.55,79			B.
	$\alpha$ Ophiuchi.....	25,2	39,1	52,7	6,5	20,2	34,2	48,0	17.27.6,56				6,94	58,69		17.28.5,58			B.
June 11	Spica.....	41,0	54,9	8,2	22,2	36,0	49,4	3,2	13.16.22,13				22,72	62,36	1,43				B.
June 15	(g) $\alpha$ Herculis.....	5,2	19,0	32,8	47,0	0,8	14,6	28,4	17.6.46,83		-1,5	+4,4	47,14	68,62	1,51				B.
	(g) $\alpha$ Ophiuchi.....	15,2	29,1	42,7	56,9	10,7	24,2	38,1	17.26.56,70				57,01	68,68					B.
June 16	$\alpha^2$ Libræ.....	51,2	5,2	18,7	33,1	46,9	0,7	14,6	14.41.32,91				33,48	69,86	1,41	14.42.43,46			B.
	B.A.C. 4984.....	21,0	35,7	50,0	5,0	19,7	34,1	49,0	15.0.4,93				5,55			15.1.15,55			B.
	H. C. 27717.....	59,2	13,3	27,2	41,6	55,8	9,8	23,9	15.4.41,54				42,12			15.5.52,13			B.
	(h) H. C. 27825.....	29,0	43,2	57,3	12,0	26,2	40,6	55,0	15.8.11,90				12,50			15.9.22,51			B.
	H. C. 28075.....	13,9	28,1	41,8	56,2	10,1	24,1	38,2	15.15.56,06				56,64			15.17.6,66			B.
	(i) B.A.C. 5105.....	39,1	53,8	8,2	23,2	38,0	52,6	7,0	15.22.23,13				23,75			15.23.33,77			B.
	$\alpha$ Coronæ.....	31,0	46,1	1,3	16,4	31,6	46,8	1,9	15.27.16,45				16,77	70,11		15.28.26,80			B.
	$\alpha$ Serpentis.....	9,2	22,9	36,4	50,0	3,7	17,2	30,7	15.35.50,01				50,35	69,99		15.37.0,39			B.
	(k) H. C. 28813.....	30,8	45,1	59,6	14,2	28,9	43,0	58,0	15.41.14,23				14,84			15.42.24,88			B.
	(l) H. C. 29038.....	29,2	43,8	57,8	12,2	26,4	41,0	55,2	15.49.12,23				12,83			15.50.22,88			B.
	H. C. 29136.....	5,2	20,1	34,8	50,0	4,5	19,2	34,1	15.52.49,70				50,32			15.54.0,37			B.
	H. C. 29306.....	53,7	8,2	21,8	36,2	50,2	4,2	18,5	15.57.36,12				36,70			15.58.46,76			B.
	H. C. 29460.....	24,2	39,2	....	8,2	....	37,2	51,8	16.2.8,11				8,72			16.3.18,78			B.
	$\delta$ Ophiuchi.....	46,3	59,8	13,1	26,8	40,2	53,8	7,2	16.5.26,74				27,20	70,04		16.6.37,26			B.
	Antares.....	26,6	41,4	56,4	11,7	26,7	41,7	56,3	16.19.11,54				12,17	70,12		16.20.22,25			B.
	(m) $\alpha$ Herculis.....	3,7	17,5	31,1	45,2	59,2	13,2	27,1	17.6.45,29				45,60	70,17		17.7.55,72			B.
June 17	(n) $\odot$ 1 L.....	4,4	19,2	33,9	48,8	3,4	18,0	32,9	5.41.48,66				49,00		1,29	5.42.59,78			B.
	$\odot$ 2 L.....	22,3	37,1	51,6	6,7	21,1	36,0	50,7	5.44.6,50				6,84			5.45.17,62			B.
	(o) Polaris SP.....	6,5	....	26,0	....	....	....	8,0	13.4.7,87				15,16						B.
	Arcturus.....	1,3	15,7	29,9	44,2	58,9	12,8	27,2	14.7.44,28				44,62	71,23					B.
June 19	$\alpha^2$ Libræ.....	47,0	1,0	14,6	29,0	42,9	56,8	10,7	14.41.28,86		-2,7		29,40	73,93	1,34				B.
June 21	$\alpha^2$ Libræ.....	44,3	58,1	12,2	26,2	40,2	54,0	8,1	14.42.26,16				26,70	16,62	1,42				B.
	(p) Metis.....	....	....	....	50,7	....	20,4	34,9	16.34.50,90				51,50			16.35.7,86			B.
	(g) Aldebaran.....	25,2	....	....	....	....	35,3	49,3	4.27.7,26				7,51	17,65	1,45	4.27.25,07			B.
	Rigel.....	26,0	39,5	53,0	6,8	20,2	34,0	47,5	5.7.6,72				7,19	17,49		5.7.24,79			B.
June 22	(g) (g) $\odot$ 1 L.....	....	0,8	14,9	30,1	45,0	59,6	....	6.3.30,08				30,35			6.3.48,00			B.
	$\odot$ 2 L.....	....	18,6	33,0	48,1	2,8	17,3	....	6.5.47,96				48,23			6.6.5,89			B.
	(g) Castor.....	....	....	....	50,1	6,0	21,9	37,8	7.24.50,08				50,27	17,75		7.25.8,01			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.  
June 19, 11<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) Great motion. (b) The night was overcast. (c) Very faint from day-light. (d) Wires VI and VII have each been diminished 3<sup>s</sup>. The eye-end of the Telescope received a blow on the east side just before the observation. (e) Faint: no object near this. (f) Very faint: others fainter in the neighbourhood. (g) Cloudy. (h) Strong day-light. (i) 'Another south-following about 20<sup>s</sup>.' (k) 'A fainter north-following.' (l) Very faint at times from cloud. (m) Much clouded especially at wire VII. The sky then became quite overcast. (n) Faint through cloud, but well defined and steady. (o) Dense clouds passing: the star very faint at wire VII. (p) Very faint from cloud. The sky was afterwards quite clouded. (q) This Limb partly without the dark glass.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
June 23	(a) 1 L. ....	....	....	55,7	9,8	23,8	37,7	51,7	11. 19. 9,79	+1,3	-2,7	+4,4	10,05		1,45	11. 19. 29,21			B.
	(b) α Ophiuchi. ....	4,6	18,2	32,2	46,1	59,8	13,6	27,2	17. 27. 45,96				46,21	19,54					B.
June 24	(c) 2 L. ....	....	34,9	49,1	4,0	18,7	33,7	....	6. 14. 4,08				4,35		1,52	6. 14. 24,77			B.
	(d) Procyon. ....	30,9	44,7	57,9	....	....	38,3	52,0	7. 31. 11,49				11,79	20,58		7. 31. 32,30			B.
	Pollux. ....	7,3	22,8	38,0	53,6	8,8	24,1	39,2	7. 35. 53,40				53,63	20,60		7. 36. 14,14			B.
	o Virginis. ....	38,6	52,0	5,4	19,6	33,0	46,8	0,2	11. 57. 19,38				19,64			11. 57. 40,43			B.
	(e) Arcturus. ....	51,8	6,0	20,0	34,8	49,0	3,2	17,7	14. 8. 34,64				34,91	20,87		14. 8. 55,84			B.
	α Herculis. ....	52,9	6,8	20,4	34,7	48,6	2,1	16,2	17. 7. 34,53				34,78	21,03		17. 7. 55,89			B.
	α Ophiuchi. ....	3,1	16,8	30,3	44,4	58,3	12,0	25,7	17. 27. 44,37				44,62	21,14		17. 28. 5,75			B.
	(d) Aldebaran. ....	....	....	....	3,2	17,2	31,2	45,2	4. 27. 3,17				3,42	21,81	1,35				B.
	(f) α Orionis. ....	....	....	32,9	46,9	0,2	13,8	27,2	5. 46. 46,65				46,93	21,81					B.
June 25	(d) 1 L. ....	....	....	....	54,8	9,0	23,8	38,3	6. 15. 54,40				54,67			6. 16. 16,54			B.
	2 L. ....	28,0	42,7	57,1	12,0	27,0	41,3	56,1	6. 18. 12,03				12,30			6. 18. 34,17			B.
June 26	1 L. ....	....	36,6	50,0	4,6	18,2	32,1	....	14. 2. 4,30	-2,2	+3,5		4,73		1,27	14. 2. 28,23			B.
	β Lyræ. ....	26,8	42,9	58,8	15,0	31,0	47,0	3,2	18. 44. 14,96				15,17	23,75		18. 44. 38,92			B.
	γ Aquilæ. ....	10,1	23,9	37,2	51,2	4,8	18,3	32,2	19. 38. 51,10				51,34	23,84		19. 39. 15,14			B.
	α Aquilæ. ....	30,6	44,2	57,6	11,7	25,0	38,7	52,2	19. 43. 11,43				11,68	23,79		19. 43. 35,48			B.
	β Aquilæ. ....	59,6	13,2	26,6	40,3	54,0	7,4	21,0	19. 47. 40,30				40,57	23,76		19. 48. 4,38			B.
June 29	(g) 1 L. ....	....	46,1	....	16,0	....	....	0,8	16. 58. 15,95				16,48		1,32	16. 58. 44,14			B.
	α Ophiuchi. ....	56,4	10,2	23,9	38,1	51,8	5,5	19,1	17. 27. 37,86				38,10	27,69		17. 28. 5,79			B.
	(g) μ Sagittarii. ....	....	59,7	14,0	28,7	43,0	....	....	18. 4. 28,56				29,09	27,74		18. 4. 56,81			B.
	(h) Melpomene. ....	....	52,8	....	....	34,0	48,3	....	18. 7. 20,53				20,96			18. 7. 48,69			B.
	ζ Aquilæ. ....	....	42,8	56,3	10,4	24,3	38,1	....	18. 58. 10,38				10,62	27,75		18. 58. 38,39			B.
June 30	(i) ε Bootis. ....	18,0	33,3	48,1	3,5	18,8	34,1	49,2	14. 38. 3,57				3,81	28,77	1,34	14. 38. 32,51			C.
	(k) Antares. ....	8,1	23,2	37,8	53,1	7,8	22,9	38,0	16. 19. 52,98				53,54	28,79		16. 20. 22,33			C.
	θ Ophiuchi. ....	43,6	58,5	13,1	28,2	43,0	57,8	12,5	17. 12. 28,10				28,65			17. 12. 57,49			C.
	α Ophiuchi. ....	55,2	9,2	22,6	36,5	50,4	4,2	18,0	17. 27. 36,59				36,83	28,96		17. 28. 5,68			C.
	58 Ophiuchi. ....	23,0	37,7	52,0	6,6	21,2	35,5	50,0	17. 34. 6,57				7,10			17. 34. 35,96			C.
	(l) 1 L. ....	7,6	22,8	37,7	53,1	8,2	23,4	38,6	18. 0. 53,07				53,61			18. 1. 22,50			C.
	(m) Melpomene. ....	35,7	49,6	2,4	16,8	30,2	43,7	57,4	18. 6. 16,54				16,97			18. 6. 45,86			C.
	o Sagittarii. ....	38,1	52,6	7,1	21,5	36,0	50,4	4,8	18. 55. 21,50				22,03			18. 55. 50,97			C.
	π Sagittarii. ....	47,0	1,4	15,6	30,2	44,8	59,2	13,7	19. 0. 30,27				30,80			19. 0. 59,74			C.
	γ Aquilæ. ....	5,1	18,7	32,2	46,1	59,6	13,4	26,9	19. 38. 46,00				46,24	29,00		19. 39. 15,22			C.
	α Aquilæ. ....	25,7	39,2	52,5	6,6	20,0	33,5	47,2	19. 43. 6,39				6,64	28,89		19. 43. 35,62			C.
	β Aquilæ. ....	54,6	8,2	21,5	35,3	48,8	2,2	15,7	19. 47. 35,19				35,46	28,94		19. 48. 4,44			C.
	α Capricorni. ....	41,3	55,2	8,8	23,0	36,6	50,3	4,1	20. 9. 22,76				23,23	28,98		20. 9. 52,23			C.
July 1	(n) 1 L. ....	54,6	....	23,8	38,7	53,4	8,0	22,5	6. 40. 38,62				38,89		1,36	6. 41. 8,49			C.
	2 L. ....	12,1	26,5	41,1	56,2	10,7	25,4	40,0	6. 42. 56,00				56,27			6. 43. 25,87			C.
	(o) ε Bootis. ....	16,7	31,8	46,7	2,4	17,5	32,6	48,0	14. 38. 2,24				2,48	30,09		14. 38. 32,53			C.
	(p) α Libræ. ....	30,4	45,0	58,6	13,1	26,8	40,7	54,6	14. 42. 12,76				13,26	29,99		14. 42. 43,31			C.
	α Coronæ. ....	11,2	26,4	41,2	56,5	11,7	26,6	41,8	15. 27. 56,49				56,74	30,05		15. 28. 26,83			C.
	α Serpentis. ....	49,3	2,8	16,2	30,0	43,5	56,9	10,4	15. 36. 29,87				30,13	30,17		15. 37. 0,23			C.
	α Herculis. ....	44,0	57,3	11,2	25,2	39,1	53,1	7,1	17. 7. 25,29				25,53	30,30		17. 7. 55,78			B.
	α Ophiuchi. ....	53,8	7,7	21,3	35,2	49,1	3,0	16,7	17. 27. 35,26				35,50	30,29		17. 28. 5,77			B.
	(d) Melpomene. ....	....	45,0	....	13,8	....	40,3	....	18. 5. 13,01				13,44			18. 5. 43,74			B.
	(d) o Sagittarii. ....	36,6	51,2	5,3	20,2	34,7	49,1	3,7	18. 55. 20,11				20,64			18. 55. 50,99			B.
	(q) ζ Aquilæ. ....	26,2	40,1	53,9	8,0	21,8	35,7	49,3	18. 58. 7,86				8,10	30,29		18. 58. 38,45			B.
July 2	(d) 1 L. ....	....	....	....	45,3	0,0	14,5	29,2	6. 44. 45,24	-2,9			45,46		1,31	6. 45. 16,44			C.
	α Herculis. ....	42,3	56,2	10,1	24,2	37,9	51,8	5,7	17. 7. 24,03				24,23	31,60		17. 7. 55,77			C.
	(r) α Ophiuchi. ....	52,6	6,4	20,1	34,0	47,8	1,3	15,4	17. 27. 33,94				34,14	31,65		17. 28. 5,70			C.
	δ Ursæ Minoris. ....	....	....	....	56,2	43,3	28,7	16,5	18. 19. 55,59				52,55						C.
	(s) β Lyræ. ....	19,1	35,2	50,9	7,4	23,5	39,5	55,6	18. 44. 7,32				7,48	31,49		18. 44. 39,11			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^{\circ}.317$ ,  $-26^{\circ}.873$ ,  $-13^{\circ}.601$ ,  $+0^{\circ}.041$ ,  $+13^{\circ}.535$ ,  $+26^{\circ}.886$ ,  $+40^{\circ}.328$ .

(a) Throughout faint from dense cloud: wire III very doubtful. (b) The night was overcast. (c) 1 L quite hid by cloud. The noted times have been diminished 1<sup>s</sup>. (d) Cloudy. (e) The night was generally cloudy. (f) Faint and unsteady. (g) Thick cloud. (h) Clouded at times. (i) The counting being 1<sup>s</sup> slow, the four last wires have been increased 1<sup>s</sup>. (k) Blazing. (l) Ragged and vibrating. (m) Faint and observed doubtfully, especially at wire III. The Planet was not in the middle of the field, the Telescope not being adjusted for fear of displacement, as it moved too freely. This was corrected after the observation by turning the regulating screws of the counterpoises, in doing which the Telescope was struck slightly. (n) Cloud. (o) The counting being 1<sup>s</sup> in advance, all except I and II have been diminished 1<sup>s</sup>. (p) Wires I and II taken hurriedly. (q) B's observations on this day are reduced independently, the clock's rate only being taken from C's. (r) Observed confusedly. (s) Faint at times from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
July 3	(a) ☉ 1 L.....	7,4	22,0	36,5	51,4	6,1	20,6	35,2	6.48.51,31	+1,3	-2,9	+3,5	51,54		1,27	6.49.23,81			C.
	☉ 2 L.....	24,6	39,3	53,6	8,7	23,2	37,8	52,5	6.51.8,53				8,76			6.51.41,03			C.
	Arcturus.....	39,7	54,2	8,3	22,7	37,1	51,2	5,6	14.8.22,68				22,90	32,80		14.8.55,56			C.
	ε Bootis.....	14,0	29,3	44,2	59,6	14,8	30,0	45,2	14.37.59,59				59,78	32,76		14.38.32,47			C.
	α <sup>2</sup> Libræ.....	28,2	42,2	56,0	10,2	24,1	37,9	52,1	14.42.10,10				10,58	32,66		14.42.43,27			C.
	(b) Melpomene.....	26,7	39,4	53,0	6,9	20,7	34,2	47,8	18.3.6,96				7,37			18.3.40,23			C.
	ζ Aquilæ.....	23,6	37,5	51,2	5,2	19,0	33,1	46,7	18.58.5,19				5,39	33,02		18.58.38,30			C.
	(c) γ Aquilæ.....	1,3	15,0	28,4	42,1	55,8	9,6	23,1	19.38.42,18				42,38	32,91		19.39.15,33			C.
	α Aquilæ.....	21,6	35,4	48,6	2,5	16,2	29,7	43,3	19.43.2,47				2,69	32,89		19.43.35,65			C.
	β Aquilæ.....	50,7	4,2	17,6	31,3	44,9	58,3	12,0	19.47.31,28				31,52	32,93		19.48.4,48			C.
	H. C. 38250.....	26,1	40,7	55,0	9,7	24,4	39,0	53,3	19.55.9,75				10,27			19.55.43,23			C.
	α <sup>2</sup> Capricorni.....	37,6	51,4	5,1	19,2	32,7	46,5	0,5	20.9.19,00				19,45	32,82		20.9.52,43			C.
	B. (w.) xx. 346..	4,7	18,4	32,2	46,4	0,2	14,3	28,1	20.13.46,33				46,81			20.14.19,79			C.
July 4	(d) Rigel.....	....	....	....	50,0	3,5	17,2	30,7	5.6.49,93				50,34	34,57	1,07	5.7.25,08			C.
	β Tauri.....	34,8	50,2	5,2	20,7	36,0	51,2	6,6	5.16.20,67				20,85	34,84		5.16.55,60			C.
	(e) α Orionis.....	....	7,1	20,1	34,0	47,4	1,1	14,5	5.46.33,92				34,15	34,75		5.47.8,92			C.
	(e) Sirius.....	19,4	33,5	47,3	1,6	15,3	29,5	43,5	6.38.1,44				1,92	34,72		6.38.36,73			C.
July 5	(a) ☉ 1 L.....	19,4	33,4	48,3	3,3	17,8	32,6	47,2	6.57.3,14				3,37			6.57.38,19			C.
	☉ 2 L.....	36,4	51,0	5,5	20,4	34,9	49,5	3,0	6.59.20,10				20,33			6.59.55,15			C.
	(f) α Hydræ.....	....	....	29,4	43,1	56,7	10,2	23,8	9.19.43,07				43,48	34,88		9.20.18,41			C.
	(g) Regulus.....	12,0	26,1	39,5	53,4	7,3	21,2	35,0	9.59.53,50				53,70	35,07		10.0.28,66			C.
	Polaris SP. M...	43,7	28,0	11,9	55,5	39,1	23,2	7,8	13.4.57,20				65,83						C.
	(a) Arcturus.....	37,3	51,7	5,6	20,3	34,6	49,0	3,2	14.8.20,24				20,46	35,21		14.8.55,60			C.
	(h) ε Bootis.....	11,5	26,8	41,6	57,2	12,3	27,5	42,6	14.37.57,07				57,26	35,26		14.38.32,42			C.
	(i) Melpomene.....	21,2	35,1	49,0	2,4	16,1	29,8	43,4	18.1.2,43				2,84			18.1.38,34			B.
	(e)(k) μ <sup>1</sup> Sagittarii.....	37,8	52,1	6,4	21,3	35,6	50,0	4,2	18.4.21,05				21,56	35,32		18.4.57,07			B.
	ζ Aquilæ.....	21,2	35,2	48,6	2,8	16,5	30,2	44,2	18.58.2,67				2,87	35,56		18.58.38,41			B.
	(l) γ Aquilæ.....	58,3	12,2	25,3	39,6	53,2	7,1	20,2	19.38.39,42				39,62	35,69		19.39.15,20			B.
	(m) α Aquilæ.....	18,7	32,4	46,2	0,3	13,3	27,2	40,3	19.42.59,77				59,99	35,61		19.43.35,57			B.
	Aldebaran.....	7,2	21,0	35,2	49,2	3,2	17,3	31,2	4.26.49,19				49,39	36,10	0,82	4.27.25,35			B.
	(e) Sirius.....	18,2	32,3	46,1	0,3	14,3	28,4	42,7	6.38.0,32				0,80	35,85		6.38.36,84			B.
July 6	(e) ☉ 1 L.....	....	39,6	54,1	9,0	23,8	38,2	....	7.1.8,94				9,17			7.1.45,22			B.
	☉ 2 L.....	42,1	56,9	11,3	26,2	40,8	55,3	10,0	7.3.26,09				26,32			7.4.2,37			B.
	(n) α <sup>2</sup> Libræ.....	....	38,9	52,3	6,5	20,5	34,4	....	14.42.6,52				7,00	36,21		14.42.43,31			B.
	δ Ophiuchi.....	20,1	33,8	46,8	0,4	14,2	27,7	41,2	16.6.0,60				0,80	36,43		16.6.37,16			B.
	(o) Melpomene.....	21,0	34,9	48,3	2,0	15,5	29,2	42,8	18.0.1,95				2,36			18.0.38,78			B.
	β Lyræ.....	13,6	30,3	46,1	2,5	18,6	34,2	50,8	18.44.2,30				2,46	36,53		18.44.38,91			B.
	ζ Aquilæ.....	20,3	34,1	47,8	1,8	15,8	29,4	43,2	18.58.1,77				1,97	36,47		18.58.38,43			B.
	(e) Aldebaran.....	6,7	20,6	34,5	49,0	2,7	16,8	30,6	4.26.48,70				48,90	36,61	0,67	4.27.25,34			C.
	(e) Sirius.....	17,4	31,6	45,5	59,6	13,6	27,6	41,7	6.37.59,58				60,06	36,60		6.38.36,56			C.
July 7	(p) ☉ 1 L.....	30,7	45,2	59,7	14,5	29,2	43,6	58,4	7.5.14,47					14,70		7.5.51,22			C.
	☉ 2 L.....	47,5	2,3	16,5	31,6	46,0	0,6	15,2	7.7.31,38					31,61		7.8.8,13			C.
	(e) Procyon.....	15,4	28,8	42,2	56,0	9,5	22,9	36,3	7.30.55,87				56,11	36,34		7.31.32,64			C.
	Pollux.....	52,0	7,2	22,2	37,5	53,1	8,2	23,4	7.55.37,66				37,84	36,48		7.56.14,37			C.
	(q) α Serpentis.....	42,6	56,2	9,4	23,3	36,7	50,3	4,0	15.36.23,21				23,44	36,83		15.37.0,20			C.
	(r) Antares.....	0,1	15,2	30,0	45,2	0,0	15,2	30,0	16.19.45,10				45,65	36,66		16.20.22,42			C.
	(s) Melpomene.....	21,2	35,1	48,9	2,5	16,1	29,4	43,2	17.59.2,34				2,75			17.59.39,57			C.
	(a) α Orionis.....	51,0	4,6	17,8	31,5	45,2	58,8	12,3	5.46.31,60				31,83	37,12	0,63	5.47.8,91			C.
	(e)(l) Sirius.....	17,0	31,2	44,5	59,3	13,2	27,2	41,2	6.37.59,09				59,57	37,11		6.38.36,67			C.
July 8	(u) ☉ 1 L.....	36,3	50,8	5,1	19,9	34,5	49,3	3,8	7.9.19,96				20,18			7.9.57,30			C.
	☉ 2 L.....	53,0	7,6	22,1	37,0	51,7	6,2	20,8	7.11.36,92				57,14			7.12.14,26			C.
	(x) Pollux.....	....	....	....	37,3	52,4	7,5	23,0	7.35.37,09				37,27	37,06		7.36.14,40			C.
	δ Ophiuchi.....	19,2	32,7	46,0	59,6	13,1	26,5	40,0	16.5.59,59				59,95	37,27		16.6.37,30			C.
	(y) Melpomene.....	22,2	36,0	49,2	3,2	16,7	30,5	43,8	17.58.3,08				3,49			17.58.40,89			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

(a) Vibrating. (b) Wires I, II, III, were observed hurriedly and doubtfully. Wires VI and VII have each been increased by 30<sup>s</sup>. (c) Flaring. (d) Clouds and great motion. Temp. 71<sup>o</sup>.0 by Transit-room Thermometer. (e) Great motion. (f) Tremor. The Max. Temp. this day by the out-door Therm. was 87<sup>o</sup>. (g) Tremor. The counting at wires I and II was 1<sup>s</sup> in advance: the clock-face was then looked at. (h) Temp. 76<sup>o</sup>.2. (i) Bright. (k) The counting, not being taken from the clock, was corrected after the observation. (l) 'Very bad.' (m) Respecting the determinations of clock-rates from mixed observations of two observers see the Introduction. (n) Very faint: not seen at wire I. (o) 'Very good.' (p) Shaking. Temp. 73<sup>o</sup>.2. (q) Radiation. (r) Hurry from wrong setting. The counting for wires I, II, III, has been corrected by -7<sup>s</sup>, not being taken from the clock. (s) Not good illumination: the Planet would have borne more. (t) No definition. (u) Ragged and vibrating. Temp. 71<sup>o</sup>. (x) Cloudy. (y) Good: wire VII alone doubtful.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"					
July 8	ζ Aquilæ.....	19,3	33,2	46,6	0,7	14,6	28,4	42,3	18.58.0,72	+1,3	-2,9	+3,5	0,92	37,54	0,63	18.58.38,35	C.
	Aldebaran.....	5,4	19,6	33,4	47,5	1,4	15,6	29,5	4.26.47,49		-3,3	+4,3	47,70	37,86	0,65		C.
	Rigel.....	6,2	19,6	33,1	47,0	0,6	14,1	27,7	5.6.46,90				47,34	37,65			C.
July 9	(a) ⊙ 1 L.....	41,2	55,8	10,3	25,1	39,6	54,1	8,7	7.13.24,97				25,19			7.14.3,02	C.
	⊙ 2 L.....	57,9	12,3	26,7	41,4	56,1	10,5	25,2	7.15.41,44				41,66			7.16.19,49	C.
	(b) Procyon.....	28,0	41,2	55,2	8,3	22,0	35,3	7.30.54,92				55,18	(37,28)				C.
	(b) Pollux.....	37,19	52,2	7,6	23,0	17.57.4,61						37,19	(37,15)				C.
	(c) Melpomene.....	37,3	4,7	18,3	31,9	17.57.4,61						5,06			17.57.43,20	B.	
	β Lyrae.....	12,0	28,3	44,3	0,9	16,7	32,7	48,8	18.44.0,52				0,67	38,34		18.44.38,83	B.
	γ Aquilæ.....	56,1	9,7	23,2	37,0	50,7	4,2	17,9	19.38.36,97				37,19	38,18		19.39.15,37	B.
	α Aquilæ.....	16,5	30,0	43,3	57,3	11,2	24,4	38,1	19.42.57,40				57,64	38,02		19.43.35,82	B.
	β Aquilæ.....	45,4	59,2	12,4	26,0	39,8	53,3	6,7	19.47.26,11				26,37	38,16		19.48.4,56	B.
	Rigel.....	5,4	19,1	32,5	46,2	0,0	13,4	27,1	5.6.46,24				46,68	38,33	0,66	5.7.25,05	C.
	(c) Sirius.....	58,1	12,0	25,8	39,7	6.37.57,83						58,36	38,34		6.38.36,77	C.	
July 10	(d) ⊙ 1 L.....	45,7	0,5	14,7	29,6	44,1	58,7	13,2	7.17.29,50				29,72			7.18.8,15	C.
	⊙ 2 L.....	2,2	16,8	31,1	46,0	0,6	15,1	29,7	7.19.45,93				46,15			7.20.24,58	C.
	(c) Regulus.....	36,1	50,0	3,7	17,6	31,3	9.59.49,97					50,18	38,57		10.0.28,69	C.	
	α <sup>2</sup> Libræ.....	22,2	36,1	50,0	4,2	18,1	32,2	46,0	14.42.4,11				4,63	38,55		14.42.43,26	C.
	(e) ζ Aquilæ.....	18,0	31,6	45,4	59,3	13,2	27,1	41,0	18.57.59,38				59,60	38,87		18.58.38,35	C.
July 12	(f) ⊙ 1 L.....	53,5	8,3	22,5	37,4	51,8	5,8	20,6	7.25.37,13				37,35		0,73	7.26.17,24	C.
	⊙ 2 L.....	9,7	24,4	38,6	53,5	8,0	22,2	37,0	7.27.53,34				53,56			7.28.33,45	C.
	(g) Regulus.....	7,2	21,0	34,4	48,6	2,4	16,1	30,0	9.59.48,53				48,74	40,00		10.0.28,70	C.
	(g)(h) δ Leonis.....	4,5	18,8	33,7	48,0	2,1	16,5	11.5.33,39				33,62	40,16		11.6.13,62	C.	
	β Leonis.....	8,4	22,4	36,2	50,3	4,2	18,2	32,1	11.40.50,25				50,46	40,06		11.41.30,47	C.
	Polaris SP. M....	43,4	26,8	7,9	54,0	38,3	23,1	7,5	13.4.56,03				66,77				C.
	Spica.....	3,4	17,1	30,5	44,4	58,2	11,7	25,4	13.16.44,39				44,84	39,95		13.17.24,91	C.
	(i) Melpomene.....	35,1	48,6	2,1	15,7	30,0	43,4	57,1	17.54.16,00				16,45			17.54.56,65	C.
	α <sup>3</sup> Capricorni....	30,4	44,2	57,9	11,9	25,6	39,4	53,2	20.9.11,80				12,29	40,13		20.9.52,57	C.
	α Orionis.....	47,6	1,2	14,3	28,2	41,7	55,5	9,1	5.46.28,23				28,47	40,58	0,74	5.47.9,03	C.
	(k) Sirius.....	13,6	28,0	41,4	55,6	9,3	23,8	37,5	6.37.55,60				56,13	40,61		6.38.36,71	C.
July 13	(l) ⊙ 1 L.....	57,0	11,4	25,8	40,3	54,8	9,5	24,0	7.29.40,40				40,63			7.30.21,24	C.
	⊙ 2 L.....	12,9	27,6	41,9	56,4	11,1	25,3	39,8	7.31.56,43				56,66			7.32.37,27	C.
	(m) Regulus.....	34,1	48,0	1,5	15,4	29,6	9.59.47,95					48,16	40,58		10.0.28,85	C.	
	(n) δ Leonis.....	49,5	4,0	18,2	32,6	47,2	1,6	16,1	11.5.32,74				32,97	40,80		11.6.13,69	C.
July 14	(o) Arcturus.....	30,8	45,2	59,3	13,8	28,1	42,3	56,6	14.8.13,73				13,96	41,60	0,84	14.8.55,51	C.
	α Coronæ.....	59,4	14,6	29,5	45,0	0,1	15,1	30,2	15.27.44,84				45,04	41,61		15.28.26,64	C.
	(p) α Serpentis.....	37,7	51,4	4,7	18,5	32,1	45,3	59,1	15.36.18,40				18,65	41,56		15.37.0,26	C.
July 15	⊙ 1 L.....	1,8	16,4	30,7	45,4	59,8	14,5	29,0	7.37.45,37				45,60		0,86	7.38.27,86	C.
	⊙ 2 L.....	17,7	32,3	46,5	1,2	15,5	30,1	44,7	7.40.1,14				1,37			7.40.43,63	C.
	(c)(n) β Leonis.....	6,0	20,1	33,4	47,6	2,0	....	....	11.40.47,76				47,97	42,53		11.41.30,38	C.
	(c) Arcturus.....	29,8	44,3	58,4	13,0	27,2	41,5	55,8	14.8.12,85				13,08	42,47		14.8.55,58	C.
	ε Bootis.....	4,1	19,4	34,2	49,8	5,0	20,1	35,3	14.37.49,70				49,89	42,50		14.38.32,40	C.
	(q) Melpomene.....	55,5	23,7	51,0	4,2	17,7	17.51.36,98					37,43			17.52.20,06	C.	
	μ <sup>1</sup> Sagittarii.....	30,5	45,1	59,3	13,8	28,3	42,7	57,2	18.4.13,84				14,40	42,53		18.4.57,04	C.
	(r) Rigel.....	1,1	14,7	27,9	41,8	55,5	9,0	22,6	5.6.41,80		-4,1	+4,2	42,21	42,93	0,77	5.7.25,18	C.
	α Orionis.....	45,3	58,8	12,2	26,0	39,6	53,1	6,5	5.46.25,93				26,13	42,98		5.47.9,13	C.
July 16	(s) ⊙ 1 L.....	3,6	18,2	32,7	47,4	1,7	16,2	30,5	7.41.47,19				47,37			7.42.30,43	C.
	⊙ 2 L.....	19,3	33,9	47,8	2,7	17,0	31,6	46,2	7.44.2,64				2,82			7.44.45,88	C.
	β Leonis.....	5,3	19,1	33,0	47,2	1,1	15,0	29,0	11.40.47,10				47,26	43,23		11.41.30,44	C.
July 17	(c) Melpomene.....	16,6	43,8	57,8	12,6	27,0	41,1	55,6	17.49.57,55				57,97		0,79	17.50.42,01	B.
	μ <sup>1</sup> Sagittarii.....	29,1	43,3	57,8	12,6	27,0	41,1	55,6	18.4.12,35				12,89	44,04			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

(a) Waving and tremulous. Temp. 72<sup>o</sup>.7. (b) These two observations, taken shortly after the Sun, are not used, being discordant, probably, from the effect of the Sun's rays on the instrument. (c) Cloudy. (d) Vibrating: Temp. 72<sup>o</sup>. (e) Bad definition. (f) Tremor: 2 L through cloud. (g) Unsteady. (h) Very faint. (i) 'Pretty good.' (k) Through cloud: extremely unsteady and ill-defined. (l) Occasionally very ragged. Temp. 69<sup>o</sup>. (m) Hurried observation: wire VII doubtful from noise. (n) Faint. (o) Wire VI was written down 41.3. (p) 'Not good.' (q) Very faint, probably from moisture on the eye-glass: wire VI the best, all the others quite uncertain. (r) Motion. (s) Temp. 71<sup>o</sup>.2.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
July 19	(a) Polaris SP. M...	39,7	24,2	9,0	52,8	36,5	22,0	5,8	13. 4. 52,86	+1,3	-4,1	+4,2	59,76		0,84	14. 43. 43,17			B.
	(b) α <sup>2</sup> Libræ.....	....	29,0	42,9	57,0	11,0	24,9	....	14. 42. 56,96				57,45	45,64		17. 2. 18,88			B.
	(c) H. C. 31195.....	48,1	3,0	17,3	32,7	47,4	2,1	17,0	17. 1. 32,51				33,08			17. 7. 55,65			B.
	α Herculis.....	28,1	42,2	55,6	9,6	23,7	37,4	51,2	17. 7. 9,69				9,85	45,93		17. 16. 46,87			B.
	H. C. 31649.....	17,7	32,0	46,0	0,6	15,0	29,2	43,4	17. 16. 0,55				1,07			17. 19. 28,79			B.
	H. C. 31733.....	59,1	13,6	28,1	42,6	57,0	11,2	25,6	17. 18. 42,45				42,98			17. 22. 25,47			B.
	c <sup>2</sup> Ophiuchi.....	55,0	9,9	24,1	39,1	53,9	8,5	23,2	17. 21. 39,10				39,66			17. 26. 26,52			B.
	52 Ophiuchi.....	56,7	11,0	25,7	40,1	54,7	9,2	23,8	17. 25. 40,17				40,71			17. 28. 50,84			B.
	H. C. 32045.....	....	34,9	49,3	4,6	19,3	34,2	....	17. 28. 4,46				5,03			17. 34. 44,55			B.
	H. C. 32271.....	16,1	30,1	44,1	58,2	12,3	26,3	40,4	17. 33. 58,22				58,73			17. 37. 20,52			B.
	(d) H. C. 32369.....	....	5,2	19,2	34,3	49,0	3,1	....	17. 36. 34,16				34,70			17. 46. 27,98			B.
	H. C. 32706.....	59,2	13,3	27,2	41,8	56,0	10,0	24,1	17. 45. 41,65				42,16			17. 49. 10,00			B.
	(e) Melpomene.....	43,0	56,3	9,7	23,9	37,6	51,1	4,7	17. 48. 23,76				24,18			17. 53. 49,24			B.
	(f) 7 Sagittarii.....	18,5	33,3	47,8	2,9	17,9	32,5	47,1	17. 53. 2,85				3,41			18. 4. 57,12			B.
	μ <sup>1</sup> Sagittarii.....	27,5	41,9	56,2	10,9	25,2	39,6	54,0	18. 4. 10,75				11,29	45,65		18. 12. 40,63			B.
	B.A.C. 6220.....	8,2	23,8	38,7	54,0	9,5	24,9	40,2	18. 11. 54,18				54,79			18. 18. 4,48			B.
	H. C. 33974.....	35,9	49,8	3,7	18,2	32,3	46,3	0,7	18. 17. 18,13				18,64			18. 41. 17,37			B.
	B.A.C. 6400.....	47,2	1,8	16,1	30,9	45,7	0,1	15,0	18. 40. 30,97				31,52			18. 44. 38,91			B.
	β Lyræ.....	4,7	20,8	36,7	53,2	9,1	25,1	41,2	18. 43. 52,97				53,05	45,97		19. 39. 15,45			B.
	γ Aquilæ.....	48,4	2,1	15,6	29,6	43,0	56,8	10,2	19. 38. 29,39				29,56	45,90		19. 43. 35,73			B.
	α Aquilæ.....	9,0	22,3	36,0	49,7	3,3	16,8	30,4	19. 42. 49,65				49,84	45,92		19. 48. 4,64			B.
	β Aquilæ.....	38,0	51,3	4,8	18,7	32,2	45,7	59,0	19. 47. 18,53				18,75	45,89					B.
July 20	(g) 1 L.....	31,8	45,6	59,3	13,8	27,9	41,9	56,0	11. 1. 13,76				13,93			11. 2. 0,36			B.
	Procyon.....	4,9	18,3	31,4	45,5	58,9	12,2	25,8	7. 30. 45,29				45,51	47,08	0,84	7. 31. 32,55			B.
	Pollux.....	41,2	56,7	11,8	27,1	42,4	57,9	13,0	7. 35. 27,16				27,28	47,22		7. 36. 14,33			B.
July 21	(h) 1 L.....	4,3	18,9	33,1	47,7	2,3	16,4	30,8	8. 1. 47,65				47,82			8. 2. 34,88			B.
	2 L.....	19,6	33,9	48,1	2,7	17,0	31,3	46,0	8. 4. 2,65				2,82			8. 4. 49,88			B.
	α Herculis.....	26,7	40,4	54,2	8,5	22,2	36,0	50,0	17. 7. 8,29				8,45	47,31		17. 7. 55,83			B.
	α <sup>2</sup> Capricorni.....	....	37,1	50,8	4,8	18,7	32,3	....	20. 9. 4,74				5,20	47,34		20. 9. 52,69			B.
	(i) B.A.C. 7069.....	4,0	....	33,2	....	....	16,8	....	20. 22. 47,76				48,31			20. 23. 35,80			B.
July 22	1 L.....	3,2	17,5	31,8	46,4	0,7	15,1	29,4	8. 5. 46,30				46,47		0,68	8. 6. 34,22			T.
	2 L.....	17,7	32,6	46,5	1,3	15,6	29,8	44,1	8. 8. 1,08				1,25			8. 8. 49,00			T.
	1 L.....	1,3	15,1	28,6	42,7	56,6	10,2	24,1	12. 50. 42,66				42,98			12. 51. 30,86			T.
	Arcturus.....	24,6	38,9	53,2	7,3	21,7	36,1	50,2	14. 8. 7,43				7,61	47,85		14. 8. 55,53			T.
	δ Ophiuchi.....	8,6	21,8	35,2	49,0	2,5	15,7	29,2	16. 5. 48,86				49,21	47,92		16. 6. 37,19			T.
	(k) Antares.....	48,9	3,6	18,2	33,7	48,8	3,5	18,4	16. 19. 33,58				34,16	48,06		16. 20. 22,14			T.
	α Ophiuchi.....	36,3	50,1	3,4	17,4	31,4	45,3	59,0	17. 27. 17,56				17,73	48,03		17. 28. 5,75			T.
	(l) Melpomene.....	35,0	48,6	1,9	15,7	29,5	43,1	57,0	17. 46. 15,83				16,25			17. 47. 4,27			T.
	(m) 9 Sagittarii.....	17,2	32,2	46,9	1,8	16,6	31,1	46,1	17. 54. 1,70				2,26			17. 54. 50,29			T.
	(n) H. C. 33180.....	27,8	42,7	57,1	12,3	27,0	42,1	57,1	17. 58. 12,30				12,87			17. 59. 0,90			T.
	(o) H. C. 33427.....	21,2	36,2	51,3	7,0	22,0	....	52,1	18. 4. 6,68				7,28			18. 4. 55,31			T.
	(p) Sirius.....	6,2	20,1	34,1	48,2	2,2	16,1	30,2	6. 37. 48,16				48,68	48,21	0,65	6. 38. 37,03			T.
												-3,4							
July 23	(q) 1 L.....	0,6	15,2	29,1	43,9	58,2	12,7	....	8. 9. 43,79				44,01			8. 10. 32,40			T.
	2 L.....	15,2	29,8	43,2	58,2	....	....	....	8. 11. 58,15				58,37			8. 12. 46,76			T.
	(r) 1 L.....	....	....	39,7	53,8	7,2	21,6	35,3	13. 44. 53,61				54,02			13. 45. 42,56			T.
	Arcturus.....	23,7	38,1	52,1	6,6	21,1	35,2	49,6	14. 8. 6,63				6,85	48,59		14. 8. 55,40			T.
	α Ophiuchi.....	35,6	49,3	3,1	17,0	30,8	44,6	58,2	17. 27. 16,94				17,14	48,62		17. 28. 5,78			T.
	(l) Melpomene.....	55,4	9,1	22,7	36,5	50,1	4,0	17,5	17. 45. 36,47				36,92			17. 46. 25,57			T.
	B.A.C. 6400.....	44,6	59,2	13,7	28,5	43,1	57,7	12,2	18. 40. 28,43				29,00			18. 41. 17,68			T.
	β Lyræ.....	2,1	18,2	33,9	50,3	6,5	22,5	38,4	18. 43. 50,27				50,41	48,60		18. 44. 39,09			T.
	(s) B.A.C. 6450.....	....	20,3	35,0	49,7	4,6	19,0	....	18. 46. 49,72				50,29			18. 47. 38,97			T.
	B.A.C. 6485.....	11,7	26,4	40,7	55,7	10,2	24,7	39,2	18. 51. 55,52				56,08			18. 52. 44,76			T.
	o Sagittarii.....	18,2	33,0	47,2	1,8	16,4	30,7	45,3	18. 55. 1,80				2,36			18. 55. 51,04			T.
	ζ Aquilæ.....	8,2	21,8	35,7	49,7	3,7	17,4	31,1	18. 57. 49,66				49,87	48,65		18. 58. 38,55			T.
	H. C. 35843.....	28,0	43,2	57,6	12,6	27,3	41,8	56,9	19. 1. 12,48				13,06			19. 2. 1,75			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40<sup>s</sup>,317, - 26<sup>s</sup>,873, - 13<sup>s</sup>,601, + 0<sup>s</sup>,041, + 13<sup>s</sup>,535, + 26<sup>s</sup>,886, + 40<sup>s</sup>,328.

(a) Motion. (b) Faint. (c) 'A brighter north-preceding.' (d) 'No star near this of equal N.P.D.' (e) Easily observed. Mag. 9.10.  
 (f) 'Two preceding about 10<sup>s</sup>.' (g) The evening and night quite cloudy. (h) Bad definition and great motion. (i) 'The north-preceding star.' The  
 other is B.A.C. 7070. (j) Great motion. (k) Satisfactorily observed: no object near. (l) 'The south-preceding and brighter of two.' (m) Disturbance  
 throughout by noise. (n) Wires III, IV, V have been diminished by 10<sup>s</sup>, and wires VI, VII, by 9<sup>s</sup>. (o) Unsteady. (p) No definition: a shutter  
 in the way prevented observation of the last wires. (q) Hid by cloud: faint at these wires. (r) 'Counting 5<sup>s</sup> slow.' Correction applied.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
July 23	$\gamma$ Aquilæ.....	45,7	59,2	12,5	26,7	40,2	53,8	7,5	19.38.26,52	+1,3	-3,4	+4,2	26,73	48,75	0,65	19.39.15,43	T.		
	(a) $\alpha$ Aquilæ.....	6,2	19,7	33,0	46,7	0,4	14,0	27,5	19.42.46,79				47,02	48,76		19.43.35,72	T.		
	$\beta$ Aquilæ.....	35,2	48,3	2,1	16,0	29,2	42,7	56,0	19.47.15,54				15,89	48,77		19.48.4,60	T.		
	$\alpha$ Aquarii.....	43,2	56,4	10,1	23,8	37,2	50,6	4,0	21.57.23,61				23,97	48,81		21.58.12,73	T.		
	(b) $\alpha$ Orionis.....	39,4	53,1	6,2	20,0	33,4	47,2	....	5.46.20,00				20,23	49,07	0,73		T.		
	(b) Sirius.....	....	....	....	47,3	1,6	15,6	....	6.37.47,43				47,95	48,96			T.		
July 24	$\odot$ 1 L.....	58,7	13,1	27,2	41,6	56,0	10,4	24,6	8.13.41,65				41,87			8.14.30,95	T.		
	$\odot$ 2 L.....	13,0	27,4	41,7	55,9	10,2	24,6	39,0	8.15.55,97				56,19			8.16.45,27	T.		
July 26	(c) $\odot$ 1 L.....	51,4	5,6	19,8	34,3	48,6	2,7	17,2	8.21.34,23				34,44		0,80	8.22.25,12	C.		
	$\odot$ 2 L.....	5,4	19,5	33,9	48,3	2,6	16,8	31,1	8.23.48,23				48,44			8.24.39,12	C.		
	(b)(d) Arcturus.....	....	35,7	50,1	....	18,5	32,8	47,2	14.8.4,29				4,51	50,89		14.8.55,58	C.		
	$\gamma$ 1 L.....	56,2	11,2	26,0	41,1	56,0	10,7	25,4	16.35.40,94				41,49			16.36.32,36	T.		
	(b)(e) $\eta$ Ophiuchi.....	....	....	....	....	18,2	32,1	46,1	17.1.4,19				4,70			17.1.55,59	T.		
	$\alpha$ Herculis.....	22,8	36,8	50,7	4,7	18,7	32,6	46,4	17.7.4,67				4,87	50,85		17.7.55,76	T.		
	$\nu$ Serpentis.....	59,6	13,2	27,1	41,0	54,7	8,6	22,2	17.11.40,91				41,39			17.12.32,28	T.		
	(b) $\beta$ Lyrae.....	59,6	15,9	31,7	48,2	4,1	20,1	35,2	18.43.47,97				48,11	50,89		18.44.39,06	T.		
	$\gamma$ Aquilæ.....	43,3	57,0	10,3	24,4	37,9	51,5	5,2	19.38.24,23				24,44	51,05		19.39.15,50	C.		
	(b) $\alpha$ Aquilæ.....	....	....	30,8	44,5	58,2	11,7	25,4	19.42.44,53				44,76	51,04		19.43.35,82	C.		
	$\beta$ Aquilæ.....	32,7	46,2	59,7	13,4	27,0	40,5	54,0	19.47.13,36				13,61	51,07		19.48.4,59	T.		
July 27	$\odot$ 1 L.....	46,5	0,8	14,9	29,4	43,7	57,8	12,0	8.25.29,30				29,51		0,90	8.26.20,98	C.		
	$\odot$ 2 L.....	0,3	14,5	28,7	43,4	57,7	11,7	26,0	8.27.43,18				43,39			8.28.34,86	C.		
	$\alpha$ Coronæ.....	49,2	4,3	19,0	34,5	49,6	4,8	19,9	15.27.34,47				34,66	51,82		15.28.26,39	C.		
	$\alpha$ Serpentis.....	27,4	41,1	54,4	8,2	21,7	35,2	48,7	15.36.8,10				8,34	51,74		15.37.0,08	C.		
	Antares.....	45,0	59,8	14,7	29,9	45,0	59,7	14,7	16.19.29,83				30,42	51,75		16.20.22,18	C.		
	(f) $\eta$ Ophiuchi.....	21,4	35,2	49,2	3,1	17,2	31,1	45,2	17.1.3,20				3,71			17.1.55,50	C.		
	$\nu$ Serpentis.....	58,4	12,3	26,0	40,1	53,7	7,5	21,3	17.11.39,90				40,38			17.12.32,12	C.		
	(g) $\gamma$ 1 L.....	37,9	52,8	7,8	23,4	38,2	53,3	8,4	17.36.23,11				23,68			17.37.15,49	C.		
	$\mu^1$ Sagittarii.....	21,4	36,0	50,2	4,6	19,1	33,4	47,8	18.4.4,64				5,19	51,73		18.4.57,02	C.		
	$\lambda$ Sagittarii.....	15,5	30,3	44,8	0,2	15,2	30,0	44,7	18.18.0,10				0,69			18.18.52,53	C.		
July 28	(h) $\odot$ 1 L.....	41,2	55,5	9,6	24,2	38,1	....	6,2	8.29.23,88			+4,6	24,11		0,96	8.30.16,54	C.		
	$\odot$ 2 L.....	55,0	9,1	23,3	37,8	52,0	6,2	20,3	8.31.37,67				37,90			8.32.30,33	C.		
	(i) $\gamma$ 1 L.....	8,5	23,3	38,9	53,8	9,0	....	....	18.37.54,00				54,60			18.38.47,44	C.		
	$\beta$ Lyrae.....	57,7	14,1	29,7	46,1	2,2	18,2	34,3	18.43.46,04				46,19	52,80		18.44.39,03	C.		
	(b) $\zeta$ Aquilæ.....	4,1	17,8	31,3	45,5	59,2	13,0	27,0	18.57.45,41				45,63	52,90		18.58.38,48	C.		
	(b) $\alpha$ Aquilæ.....	1,9	15,4	29,1	42,7	56,2	9,7	23,6	19.42.42,65				42,90	52,91		19.43.35,78	C.		
	$\beta$ Aquilæ.....	31,1	44,5	57,8	11,4	25,0	38,5	52,2	19.47.11,50				11,77	52,92		19.48.4,65	C.		
	H. C. 38250.....	6,2	21,0	35,3	50,1	4,5	19,2	33,7	19.54.50,00				50,59			19.55.43,48	C.		
	H. C. 38503.....	36,6	51,0	5,0	19,3	33,5	47,7	2,0	20.0.19,30				19,86			20.1.12,75	C.		
	$\alpha^2$ Capricorni.....	17,8	31,7	45,3	59,2	13,2	27,0	40,7	20.8.59,28				59,79	52,81		20.9.52,69	C.		
July 29	$\alpha$ Coronæ.....	47,3	2,6	17,2	32,7	47,7	2,8	17,8	15.27.32,58				32,78	53,67	0,87	15.28.26,43	T.		
	$\alpha$ Serpentis.....	25,4	39,1	52,5	6,3	19,8	33,2	46,8	15.36.6,16				6,42	53,64		15.37.0,08	T.		
	(k) $\alpha$ Ophiuchi.....	30,5	44,2	57,8	11,9	25,7	39,3	53,1	17.27.11,78				12,00	53,72		17.28.5,72	T.		
	(l) Melpomene.....	36,3	50,1	3,4	17,7	31,2	45,1	....	17.42.17,48				17,96			17.43.11,69	T.		
	$\beta$ Lyrae.....	56,9	13,1	28,9	45,2	1,4	17,2	33,4	18.43.45,16				45,31	53,68		18.44.39,08	T.		
	B.A.C. 6467.....	48,8	3,5	17,5	32,2	46,6	0,8	15,1	18.48.32,07				32,64			18.49.26,41	T.		
	(m) B.A.C. 6485.....	6,7	21,3	35,7	50,7	5,2	19,4	34,2	18.51.50,50				51,09			18.52.44,86	T.		
	$\sigma$ Sagittarii.....	13,2	27,7	42,1	57,1	11,5	25,8	40,5	18.54.56,85				57,43			18.55.51,21	T.		
	$\zeta$ Aquilæ.....	2,8	16,9	30,6	44,6	58,2	12,2	26,0	18.57.44,47				44,69	53,84		18.58.38,47	T.		
	$\pi$ Sagittarii.....	22,4	36,9	51,1	5,7	20,1	34,7	48,8	19.0.5,67				6,25			19.1.0,03	T.		
	B.A.C. 6738.....	47,0	1,9	16,2	31,6	46,3	1,3	16,2	19.32.31,50				32,11			19.33.25,91	T.		
	(n) $\gamma$ 1 L.....	59,2	14,3	29,2	44,5	59,7	14,7	29,6	19.38.44,45				45,05			19.39.38,85	T.		
(o)(p) $\alpha$ Aquilæ.....	....	....	27,3	41,7	55,3	8,8	22,3	19.42.41,49				41,74	54,08		19.43.35,54	T.			
(o)(q) $\beta$ Aquilæ.....	30,2	43,4	57,2	10,7	24,3	37,9	51,2	19.47.10,70				10,97	53,73		19.48.4,78	T.			
H. C. 38434.....	11,0	25,4	40,2	55,1	9,8	24,6	39,2	19.58.55,04				55,64			19.59.49,45	T.			

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.

(a) Flaring. (b) Clouds. (c) Temp. 69°.2. The observations of C and T on this day are reduced independently. (d) Disturbance.  
 (e) The counting was 10° fast. (f) Hurried by wrong setting. (g) Vibrating. The noted times were 30° in advance of the clock. (h) Clouds passing over suddenly made the Limbs ragged and unsteady. Wires IV and VII of 1 L were doubtful: the former was written down 23,2. (i) Very doubtful from cloud.  
 (k) 'The counting was 1° fast.' (l) 'Good.' (m) The noted times have been increased by 30°. (n) All the wires except I have been increased 10°. (o) Bad definition. (p) Wire III hurried: perhaps 1° too small. (q) Disturbance between wires II and III: all after II have been increased 1°.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
July 29	(a) * N.P.D. 113° 53'	16,2	30,7	45,4	0,3	15,1	30,0	44,6	20 . 3 . 0,33	+1,3	-3,4	+4,6	0,93		0,87	20 . 3 . 54,75	T.		
	α Capricorni . . . .	17,1	30,7	44,7	58,7	12,3	26,0	39,8	20 . 8 . 58,47				58,98	53,63		20 . 9 . 52,80	T.		
	β Capricorni . . . .	7,8	21,7	35,2	49,7	3,7	17,5	31,5	20 . 11 . 49,59				50,12			20 . 12 . 43,94	T.		
	π Capricorni . . . .	16,2	30,5	44,5	58,9	13,0	27,1	41,3	20 . 17 . 58,79				59,35			20 . 18 . 53,18	T.		
	(b) α Orionis . . . . .	....	48,0	1,3	15,1	....	....	....	5 . 46 . 15,05				15,30	54,12	0,92	5 . 47 . 9,39	T.		
July 30	(c) ☉ 1 L . . . . .	28,3	42,9	57,2	11,4	25,5	39,9	54,0	8 . 37 . 11,31				11,53			8 . 38 . 5,73	T.		
	☉ 2 L . . . . .	....	56,5	10,7	25,0	39,2	53,2	....	8 . 39 . 24,92				25,14			8 . 40 . 19,34	T.		
	α Libræ . . . . .	6,1	20,0	33,9	48,1	2,1	15,9	30,0	14 . 41 . 48,02				48,55	54,41		14 . 42 . 42,98	T.		
	Antares . . . . .	42,2	57,1	11,8	27,2	42,2	57,0	12,0	16 . 19 . 27,07				27,69	54,45		16 . 20 . 22,19	T.		
	α Herculis . . . . .	19,3	33,2	46,8	1,1	14,8	28,7	42,7	17 . 7 . 0,94				1,16	54,53		17 . 7 . 55,69	T.		
	α Ophiuchi . . . . .	29,3	43,2	56,8	11,1	24,6	38,6	52,2	17 . 27 . 10,82				11,04	54,67		17 . 28 . 5,58	T.		
	(d) Melpomene . . . . .	....	23,2	37,0	50,6	4,7	18,2	....	17 . 41 . 50,74				51,23			17 . 42 . 45,78	T.		
	μ <sup>1</sup> Sagittarii . . . . .	18,2	33,2	47,3	2,0	16,5	30,6	45,2	18 . 4 . 1,85				2,43	54,49		18 . 4 . 56,99	T.		
	γ Aquilæ . . . . .	39,5	53,2	6,7	20,7	34,6	48,0	1,6	19 . 38 . 20,61				20,84	54,67		19 . 39 . 15,46	T.		
	α Aquilæ . . . . .	0,2	13,7	27,2	41,0	54,7	8,2	21,8	19 . 42 . 40,97				41,22	54,60		19 . 43 . 35,85	T.		
	B.A.C. 6888 . . . . .	31,7	47,0	1,9	17,1	32,2	47,6	2,6	19 . 55 . 17,16				17,80			19 . 56 . 12,44	T.		
	H. C. 38434 . . . . .	9,9	24,7	39,2	54,2	8,9	23,7	38,4	19 . 58 . 54,14				54,74			19 . 59 . 49,38	T.		
	(e) β Capricorni . . . . .	....	20,6	34,7	48,7	2,8	16,7	....	20 . 11 . 48,70				49,23			20 . 12 . 43,87	T.		
	π Capricorni . . . . .	15,3	29,4	43,6	57,9	12,0	26,2	40,5	20 . 17 . 57,85				58,41			20 . 18 . 53,06	T.		
	17 Capricorni . . . . .	58,7	13,0	27,2	42,1	....	....	....	20 . 36 . 42,03				42,62			20 . 37 . 37,28	T.		
	(f) 1 L . . . . .	....	56,7	11,2	26,5	41,6	56,6	....	20 . 37 . 26,52				27,11			20 . 38 . 21,77	T.		
	2 L . . . . .	....	14,7	29,4	44,7	59,6	14,3	29,2	20 . 39 . 44,48				45,07			20 . 40 . 39,73	T.		
	29 Capricorni . . . . .	....	12,2	26,1	40,2	54,3	8,0	....	21 . 6 . 40,16				40,70			21 . 7 . 35,38	T.		
	ι Capricorni . . . . .	24,6	39,0	52,7	7,1	21,4	35,3	49,5	21 . 13 . 7,09				7,64			21 . 14 . 2,32	T.		
	July 31	(g) γ Aquilæ . . . . .	38,6	52,3	5,7	19,8	33,6	47,0	0,5	19 . 38 . 19,65		-4,3		19,83	55,68	0,89	19 . 39 . 15,51	T.	
(g) α Aquilæ . . . . .		59,2	12,3	26,1	40,0	53,7	7,1	20,7	19 . 42 . 39,87				40,07	55,75		19 . 43 . 35,75	T.		
(g) β Aquilæ . . . . .		....	41,7	55,1	8,7	22,2	35,8	49,6	19 . 47 . 8,76				8,99	55,71		19 . 48 . 4,67	T.		
β Aquarii . . . . .		11,5	25,1	38,2	52,0	5,6	19,0	32,6	21 . 22 . 52,00				52,40	55,66		21 . 23 . 48,15	T.		
(g) 2 L . . . . .		33,2	47,7	2,1	17,1	31,7	45,9	....	21 . 35 . 16,95				17,49			21 . 36 . 13,24	T.		
(g) μ Capricorni . . . . .		....	51,7	5,4	19,6	33,4	47,1	1,1	21 . 44 . 19,45				19,95			21 . 45 . 15,71	T.		
Aug. 2	☉ 1 L . . . . .	5,7	20,1	34,1	48,2	2,4	16,4	30,7	8 . 48 . 48,23				48,41		0,71	8 . 49 . 45,11	T.		
	(h) ☉ 2 L . . . . .	....	....	47,0	1,2	15,6	29,7	43,9	8 . 51 . 1,34				1,52			8 . 51 . 58,22	T.		
	(i) ε Bootis . . . . .	....	....	....	34,8	50,2	5,3	20,5	14 . 37 . 34,89				35,02	57,10		14 . 38 . 31,89	T.		
	(i) α Libræ . . . . .	....	....	....	45,7	59,6	13,2	27,6	14 . 41 . 45,57				46,08	56,83		14 . 42 . 42,96	T.		
	α Serpentis . . . . .	22,2	35,7	49,2	3,0	16,4	29,9	43,7	15 . 36 . 2,87				3,08	56,93		15 . 36 . 59,98	T.		
	Antares . . . . .	39,7	54,8	9,4	24,8	39,7	54,6	9,5	16 . 19 . 24,64				25,25	56,85		16 . 20 . 22,17	T.		
	α Ophiuchi . . . . .	27,1	41,1	54,5	8,5	22,5	36,1	49,7	17 . 27 . 8,50				8,67	57,01		17 . 28 . 5,63	T.		
	(k) Melpomene . . . . .	....	....	....	43,0	56,2	10,0	23,7	17 . 40 . 42,60				43,06			17 . 41 . 40,02	T.		
	H. C. 33180 . . . . .	18,7	33,8	48,4	3,7	18,2	33,2	48,0	17 . 58 . 3,43				4,03			17 . 59 . 1,00	T.		
	(l) H. C. 33327 . . . . .	50,2	4,5	18,7	33,3	47,6	1,8	16,2	18 . 1 . 33,18				33,73			18 . 2 . 30,70	T.		
	(m) μ <sup>1</sup> Sagittarii . . . . .	16,2	30,7	44,9	59,7	13,8	28,6	....	18 . 3 . 59,53				60,09	56,81		18 . 4 . 57,06	T.		
Aug. 3	β Aquilæ . . . . .	26,2	39,6	53,0	6,7	20,2	33,8	47,4	19 . 47 . 6,70				6,93	57,78	0,73		T.		
	(n) β Tauri . . . . .	12,2	27,7	42,7	58,2	13,7	....	44,2	5 . 15 . 58,22				58,34	58,16			T.		
	(n) Procyon . . . . .	....	....	....	34,4	48,2	1,3	15,0	7 . 30 . 34,42				34,65	58,15	0,71	7 . 31 . 32,78	C.		
Aug. 4	(o) ☉ 1 L . . . . .	48,1	2,2	15,8	30,3	44,6	58,6	12,6	8 . 56 . 30,31				30,48			8 . 57 . 28,65	C.		
	☉ 2 L . . . . .	0,5	14,7	28,6	43,0	57,1	11,2	25,2	8 . 58 . 42,90				43,07			8 . 59 . 41,25	C.		
	(p) α Coronæ . . . . .	....	....	....	12,5	28,0	43,0	58,1	15 . 27 . 27,85				27,99	58,36		15 . 28 . 26,36	C.		
	(n)(q) α Serpentis . . . . .	20,7	34,2	47,7	....	....	....	42,1	15 . 36 . 1,36				1,57	58,41		15 . 36 . 59,94	C.		
	Antares . . . . .	38,2	53,3	8,0	23,2	38,1	53,2	8,0	16 . 19 . 23,14				23,75	58,33		16 . 20 . 22,14	C.		
	α Ophiuchi . . . . .	25,7	39,5	53,1	7,2	20,8	34,7	48,5	17 . 27 . 7,07				7,24	58,42		17 . 28 . 5,67	C.		
	(r) Melpomene . . . . .	26,0	39,7	53,4	7,1	21,0	34,5	48,4	17 . 40 . 7,16				7,62			17 . 41 . 6,05	C.		
	μ <sup>1</sup> Sagittarii . . . . .	14,6	29,2	43,4	58,2	12,3	26,6	41,3	18 . 3 . 57,95				58,51	58,38		18 . 4 . 56,96	C.		
	(s) δ Ursæ Minoris . . . . .	3,8	50,6	34,2	25,0	11,3	59,0	45,8	18 . 19 . 24,24				19,20				C.		
	(n) Castor . . . . .	....	37,7	53,6	....	25,4	41,3	57,3	7 . 24 . 9,54				9,62	59,01	0,75	7 . 25 . 8,53	C.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328.

(a) 'Came high in the field.' H. C. 33654 was set for, the N.P.D. of which is 113°.48'. (b) Cloud. (c) Great motion and bad definition. The times for 2 L have been increased 40°. (d) Faint, but the observation was considered good. (e) The times have been corrected by +3°. The observer was delayed at the 5-foot Equatorial. (f) The same observer took the Circle observation. (g) Cloudy. (h) Disturbance at wires I and II by noise of a workman. (i) Faint. (j) 'Good.' Delay by the Circle observation. (k) 'The counting was 10° fast.' Correction applied. (m) Very faint, gradually disappearing in cloud. (n) Clouds. (o) Tremor. Temp. 65°. Wire IV of 2 L was set down 33,0. (p) Hurried at first. (q) Wire III doubtful. (r) Observed pretty easily. (s) Steady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Aimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"	s.	s.	s.	h.	m.	s.	
Aug. 4	(a)(b) Procyon .....	....	6,6	20,1	33,7	47,3	0,4	14,2	7.30.33,63	+1,3	-4,3	+4,6	33,86	58,96	0,75	7.31.32,77			C.
	(a)(c) Pollux .....	30,0	45,2	....	....	....	....	0,7	7.35.15,48				15,60	59,15		7.36.14,52			C.
Aug. 5	α Ophiuchi .....	25,2	38,8	52,4	6,5	20,1	33,9	47,7	17.27.6,37				6,54	59,11		17.28.5,77			C.
	(d) Melpomene .....	12,2	25,7	39,0	53,2	6,4	20,4	34,1	17.39.53,00				53,46			17.40.52,69			C.
	(e) μ <sup>1</sup> Sagittarii .....	14,3	28,7	42,6	57,2	12,0	26,2	40,4	18.3.57,35				57,91	58,97		18.4.57,16			C.
Aug. 6	α Herculis .....	13,6	27,7	41,5	55,4	9,5	23,3	37,2	17.6.55,46				55,63	59,98	0,80	17.7.55,54			C.
	α Ophiuchi .....	24,3	38,0	51,5	5,6	19,3	33,2	47,0	17.27.5,56				5,73	59,91		17.28.5,65			C.
	(f) Melpomene .....	58,9	....	26,4	40,7	54,6	....	21,8	17.39.40,48				40,95			17.40.40,88			C.
	μ <sup>1</sup> Sagittarii .....	13,3	27,7	41,7	56,4	11,0	25,2	39,8	18.3.56,44				57,00	59,88		18.4.56,94			C.
Aug. 7	γ Aquilæ .....	33,5	47,2	0,5	14,4	28,1	41,8	55,5	19.38.14,43				14,61	60,91	0,88	19.39.15,50			C.
	(g) α Aquilæ .....	54,0	7,4	21,1	34,7	48,4	2,1	15,4	19.42.34,73				34,93	60,90		19.43.35,82			C.
	β Aquilæ .....	23,2	36,7	50,0	3,6	17,2	30,7	44,2	19.47.3,66				3,89	60,83		19.48.4,79			C.
	Neptune .....	40,3	54,0	7,4	21,2	34,6	48,2	2,0	22.49.21,10				21,53			22.50.22,54			C.
	α Pegasi .....	42,6	56,5	10,3	24,4	38,2	52,2	6,1	22.56.24,33				24,50	61,02		22.57.25,51			C.
Aug. 9	(h) ⊙ 2 L. ....	....	....	....	46,3	0,4	14,3	28,2	9.17.46,26		-4,5		46,42		1,02	9.18.48,63			C.
	(h) Polaris SP. ....	....	....	9,5	51,5	....	....	....	13.4.52,92				66,55						C.
	(h) Polaris SP. M. ....	37,5	21,4	6,0	51,5	35,0	....	....	13.4.52,25				65,88						C.
	Arcturus .....	9,6	24,0	38,1	52,5	7,0	21,2	35,5	14.7.52,55				52,72	62,48		14.8.55,13			C.
	α Herculis .....	11,3	25,2	38,7	53,0	6,6	20,7	34,5	17.6.52,86				53,02	62,56		17.7.55,56			C.
	(h) α Ophiuchi .....	21,4	35,3	49,1	....	....	....	....	17.27.2,87				3,03	62,58		17.28.5,58			C.
	α Aquarii .....	29,7	43,3	56,5	10,1	23,6	37,1	50,5	21.57.10,11				10,44	62,60		21.58.13,19			C.
	Castor .....	17,6	33,6	49,4	5,4	21,4	37,1	53,0	7.24.5,36				5,42	63,32	1,08	7.25.8,63			C.
	Procyon .....	48,8	2,4	15,8	29,5	43,0	56,4	10,0	7.30.29,42				29,64	63,27		7.31.32,86			C.
	(h) Pollux .....	25,5	40,9	56,0	11,4	....	....	....	7.35.11,39				11,50	63,35		7.36.14,72			C.
Aug. 10	α Herculis .....	10,2	24,1	37,6	52,0	5,9	19,7	33,4	17.6.51,84				52,00	63,56		17.7.55,65			C.
	(i) α Ophiuchi .....	20,4	34,3	47,9	1,7	15,7	29,4	43,2	17.27.1,80				1,96	63,63		17.28.5,63			C.
	(k) Melpomene .....	....	....	....	....	....	....	50,4	17.39.9,06				9,53			17.40.13,21			C.
	β Aquilæ .....	20,3	33,9	47,2	1,0	14,6	27,8	41,4	19.47.0,88				1,10	63,61		19.48.4,87			C.
Aug. 12	(h)(l) ⊙ 1 L. ....	....	25,7	39,5	53,7	7,6	21,4	....	9.26.53,58				53,74		1,02	9.27.58,85			C.
	⊙ 2 L. ....	23,1	37,0	50,6	5,0	18,7	32,5	46,6	9.29.4,79				4,95			9.30.10,06			C.
Aug. 13	(m) ⊙ 1 L. ....	57,2	10,9	24,7	39,0	52,7	6,6	20,5	9.30.38,80		-4,9		38,94		1,07	9.31.45,09			C.
	⊙ 2 L. ....	8,0	21,9	35,6	50,0	3,8	17,6	31,5	9.32.49,77				49,91			9.33.56,07			C.
	(h) Arcturus .....	....	....	34,0	48,7	2,0	....	31,4	14.7.48,55				48,69	66,45		14.8.55,05			C.
	α Aquilæ .....	48,4	2,0	15,3	29,2	42,6	56,3	10,0	19.42.29,12				29,29	66,52		19.43.35,90			C.
	β Aquilæ .....	17,4	31,0	44,3	58,1	11,5	25,1	38,5	19.46.57,99				58,19	66,51		19.48.4,80			C.
	(n) Neptune .....	1,4	15,1	28,4	42,2	55,7	9,3	22,7	22.48.42,11				42,52			22.49.49,27			C.
	(o) α Pegasi .....	37,0	50,9	4,6	18,6	32,7	46,4	0,3	22.56.18,65				18,79	66,83		22.57.25,54			C.
Aug. 14	(p) ⊙ 1 L. ....	41,6	55,4	9,1	23,4	37,2	51,2	5,0	9.34.23,27				23,41		1,10	9.35.30,68			C.
	(h) ⊙ 2 L. ....	....	....	20,2	34,3	48,0	2,1	15,8	9.36.34,18				34,32			9.37.41,59			C.
Aug. 17	(q) ⊙ 1 L. ....	....	....	20,0	34,0	47,6	1,7	15,6	9.46.33,94				34,08		1,25	9.46.45,23			T.
	⊙ 2 L. ....	2,7	16,6	....	....	....	12,1	25,9	9.48.44,31				44,45			9.48.55,62			T.
	(r) Procyon .....	40,1	53,6	6,8	20,7	34,2	....	....	7.31.20,59				20,80	12,27					T.
	(r) Pollux .....	....	....	47,1	2,8	18,0	33,3	48,5	7.36.2,67				2,75	12,29					T.
Aug. 18	(r) ⊙ 1 L. ....	34,6	48,5	2,1	16,1	30,0	43,7	57,8	9.50.16,12				16,26			9.50.28,66			T.
	⊙ 2 L. ....	45,0	58,8	12,3	26,6	40,2	53,9	7,8	9.52.26,37				26,51			9.52.38,91			T.
Aug. 23	η Ophiuchi .....	53,8	7,9	21,3	35,8	49,6	3,7	17,5	17.1.35,66		-3,6	+4,7	36,20		1,23	17.1.55,18			T.
	α Herculis .....	54,6	8,2	21,8	36,2	50,1	4,0	17,9	17.7.36,12				36,33	19,05		17.7.55,32			T.
	(s) ⊙ 1 L. ....	13,2	28,2	43,2	58,2	13,3	28,2	43,3	17.17.58,23				58,82			17.18.17,81			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

Aug. 14, 10<sup>h</sup>, Hardy was put forward 1<sup>m</sup>. (The minute hand moves stiffly, and on moving it the tick of the clock becomes louder.)

(a) Clouds. (b) Motion. (c) Wire VII very doubtful. (d) Very faint and observed doubtfully: the two last wires are perhaps the best.  
 (e) 'Not good.' (f) Extremely faint: observed doubtfully without illumination of the field, the wires being just visible by day-light. (g) Blazing.  
 (h) Cloud. (i) Wire IV was uncertain. (k) I could only obtain a doubtful observation at this wire. (l) Wires II and III of 1 L. uncertain.  
 (m) Temp. 60<sup>o</sup>.5. (n) Wire I was set down 2.4, and the counting was then corrected by looking at the clock. (o) Wire VII was written down 1.3.  
 (p) Ragged and tremulous. Temp. 61<sup>o</sup>. (q) Clouds continually passing. (r) Cloudy. (s) Clouded but steady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
Aug. 23	$\alpha$ Ophiuchi .....	5,0	18,7	32,1	46,3	0,1	13,7	27,6	17. 27. 46,22	+1,3	-3,6	+4,7	46,43	18,98	1,23	17. 28. 5,43			T.
	$\gamma$ Aquilæ.....	15,2	28,6	42,2	56,0	9,6	23,7	37,0	19. 38. 56,04				56,26	19,18		19. 39. 15,38			T.
	$\alpha$ Aquilæ.....	35,7	49,2	2,6	16,2	30,1	43,4	57,2	19. 43. 16,34				16,58	19,18		19. 43. 35,70			T.
	(a) $\beta$ Aquilæ.....	4,7	18,0	31,6	45,5	59,0	12,5	25,9	19. 47. 45,31				45,58	19,08		19. 48. 4,71			T.
	$\alpha$ Aquarii.....	13,3	26,7	40,2	53,7	7,3	20,6	34,0	21. 57. 53,69				54,06	19,10		21. 58. 13,29			T.
Aug. 25	(b) $\zeta$ Aquilæ.....	35,0	48,8	2,6	16,3	30,4	44,2	58,1	18. 58. 16,49				16,70	21,64	1,22				T.
	(a) $\pi$ Sagittarii.....	....	....	....	37,7	52,2	6,6	20,9	19. 0. 37,68				38,26			19. 0. 59,91			T.
Aug. 26	$\alpha$ Herculis .....	50,6	4,4	18,2	32,3	46,3	0,2	14,0	17. 7. 32,28				32,49	22,84	1,30	17. 7. 55,23			T.
	$\alpha$ Ophiuchi .....	1,0	14,6	28,2	42,3	56,2	10,0	23,6	17. 27. 42,27				42,48	22,89		17. 28. 5,23			T.
	$\mu^1$ Sagittarii.....	50,2	4,7	18,9	33,7	47,9	2,1	16,6	18. 4. 33,44				34,02	22,65		18. 4. 56,81			T.
	$\delta$ Ursæ Minoris...	....	16,7	0,5	51,3	38,5	33,0	11,3	18. 19. 51,77				47,32						T.
	H. C. 36136.....	41,1	55,4	9,7	24,7	39,0	53,5	8,0	19. 7. 24,48				25,07			19. 7. 47,92			T.
	$\rho^1$ Sagittarii.....	1,6	15,6	29,7	44,1	58,2	12,2	26,6	19. 12. 44,00				44,56			19. 13. 7,41			T.
	H. C. 36520.....	46,7	1,0	15,0	29,7	43,8	58,0	12,2	19. 15. 29,49				30,06			19. 15. 52,91			T.
	H. C. 36678.....	16,8	31,6	45,7	0,2	14,7	29,0	43,7	19. 19. 0,24				0,82			19. 19. 23,68			T.
	H. C. 36828.....	14,9	29,0	43,6	57,0	11,0	25,0	39,1	19. 21. 57,09				57,63			19. 22. 20,49			T.
	(c) H. C. 36976.....	42,1	56,1	9,9	24,1	38,2	52,2	6,2	19. 25. 24,11				24,66			19. 25. 47,52			T.
	$h^2$ Sagittarii.....	....	51,3	5,6	21,1	35,8	50,7	....	19. 27. 20,90				21,52			19. 27. 44,39			T.
	$e^2$ Sagittarii.....	59,7	13,9	27,6	42,0	56,1	10,1	24,1	19. 33. 41,93				42,47			19. 34. 5,34			T.
	$\gamma$ Aquilæ.....	11,2	25,0	38,2	52,2	6,0	19,6	33,2	19. 38. 52,20				52,42	23,00		19. 39. 15,29			T.
	$\eta$ 1 L.....	29,4	44,3	59,3	14,6	29,7	44,6	59,3	20. 17. 14,45				15,04			20. 17. 37,95			T.
	B.A.C. 7049.....	45,2	59,7	14,2	29,2	43,8	58,2	12,8	20. 20. 29,02				29,62			20. 20. 52,53			T.
	$\eta$ Capricorni.....	54,7	9,1	23,2	37,8	52,1	6,7	21,0	20. 55. 37,80				38,38			20. 56. 1,33			T.
	29 Capricorni...	30,2	44,0	58,1	12,1	26,1	40,2	54,2	21. 7. 12,13				12,67			21. 7. 35,62			T.
	$\beta$ Aquarii.....	44,3	58,0	11,2	25,0	38,6	52,0	5,6	21. 23. 24,96				25,39	22,86		21. 23. 48,36			T.
	$\alpha$ Aquarii.....	9,4	23,0	36,2	49,9	3,4	16,9	30,3	21. 57. 49,88				50,25	22,93		21. 58. 13,25			T.
	B.A.C. 7804.....	44,6	58,1	11,6	25,4	38,9	52,5	6,0	22. 15. 25,30				25,75			22. 15. 48,77			T.
	Fortuna.....	53,7	7,2	21,0	34,7	48,1	1,8	15,1	22. 18. 34,51				34,96			22. 18. 57,98			T.
	Neptune.....	38,2	41,7	55,1	9,1	22,7	36,1	49,7	22. 48. 8,95				9,41			22. 48. 32,45			T.
	$\alpha$ Pegasi.....	21,1	34,6	48,6	2,6	16,7	30,1	44,2	22. 57. 2,56				2,77	23,01		22. 57. 25,82			T.
Aug. 27	$\odot$ 1 L.....	34,9	48,3	1,8	15,9	29,6	43,2	56,9	10. 23. 15,80				16,02		1,32	10. 23. 39,70			T.
	$\odot$ 2 L.....	43,9	57,7	11,1	24,9	38,7	52,3	6,0	10. 25. 24,94				25,16			10. 25. 48,84			T.
	$\delta$ Ophiuchi.....	31,7	45,6	58,6	12,5	25,8	39,2	52,6	16. 6. 12,28				12,68	23,99		16. 6. 36,68			T.
	$\alpha$ Ophiuchi.....	59,6	13,4	27,1	41,1	54,7	8,6	22,3	17. 27. 40,97				41,18	24,17		17. 28. 5,25			T.
	(d) $\mu^1$ Sagittarii.....	....	3,2	17,3	32,1	46,6	0,8	....	18. 4. 32,00				32,58	24,07		18. 4. 56,68			T.
	H. C. 34627.....	49,1	3,8	18,1	33,2	47,9	2,7	17,4	18. 33. 33,17				33,78			18. 33. 57,91			T.
	(e) $e^1$ Sagittarii.....	10,0	24,1	37,9	52,2	6,2	20,1	34,3	19. 31. 52,11				52,66			19. 32. 16,84			T.
	$\gamma$ Aquilæ.....	10,0	23,7	37,2	51,1	4,7	18,6	32,0	19. 38. 51,04				51,26	24,15		19. 39. 15,45			T.
	$\alpha$ Aquilæ.....	30,6	44,2	57,5	11,2	24,9	38,3	51,9	19. 43. 11,23				11,47	24,27		19. 43. 35,66			T.
	(f) $\beta$ Aquilæ.....	59,7	13,2	26,4	40,2	53,8	7,3	20,6	19. 47. 40,17				40,44	24,20		19. 48. 4,64			T.
	$\eta$ Capricorni.....	....	....	21,8	36,5	50,8	4,9	19,6	20. 55. 36,38				56,96			20. 56. 1,22			T.
	29 Capricorni....	29,0	42,9	56,7	11,0	24,8	38,8	52,7	21. 7. 10,84				11,38			21. 7. 35,65			T.
	(g) B. (w.) XXI. 222.	22,2	35,9	49,6	3,7	17,4	31,1	45,0	21. 10. 3,56				4,07			21. 10. 28,34			T.
	$\eta$ 1 L.....	26,6	41,4	56,1	11,1	25,7	40,2	55,1	21. 13. 10,88				11,45			21. 13. 35,73			T.
	B. (w.) XXI. 418.	18,6	32,6	46,2	0,0	13,9	27,7	41,3	21. 18. 0,04				0,55			21. 18. 24,83			T.
	$\beta$ Aquarii.....	43,2	56,7	10,0	23,5	37,3	50,7	4,3	21. 23. 23,67				24,10	24,15		21. 23. 48,39			T.
	$\mu$ Capricorni.....	9,5	23,7	37,1	51,2	5,0	18,8	32,6	21. 44. 51,12				51,65			21. 45. 15,96			T.
	B.A.C. 7640.....	39,8	53,7	7,6	21,8	35,8	49,7	3,7	21. 49. 21,72				22,26			21. 49. 46,57			T.
	B. (w.) XXI. 1228	29,1	42,3	55,8	9,5	23,2	36,9	50,6	21. 52. 9,63				10,08			21. 52. 34,40			T.
	B. (w.) XXI. 1279	7,2	20,8	34,4	48,5	1,9	15,4	29,1	21. 54. 48,19				48,65			21. 55. 12,97			T.
	$\alpha$ Aquarii.....	22,6	36,6	50,2	4,2	18,2	32,0	45,9	21. 58. 4,24				4,77			21. 58. 29,09			T.
	B.A.C. 7804.....	43,2	56,7	10,2	24,0	37,6	51,0	4,7	22. 15. 23,91				24,36			22. 15. 48,69			T.
	Fortuna.....	59,7	13,0	26,2	40,2	53,7	7,3	20,8	22. 17. 40,12				40,57			22. 18. 4,91			T.
	B. (w.) XXII. 493	29,7	43,2	56,7	10,3	23,7	37,3	50,8	22. 23. 10,24				10,68			22. 23. 35,02			T.
	B. (w.) XXII. 902	52,2	6,0	19,6	33,6	46,9	0,7	14,0	22. 42. 33,28				33,74			22. 42. 58,10			T.
	(h) B. (w.) XXII. 957	41,7	55,2	8,6	22,3	35,7	49,2	2,8	22. 45. 22,21				22,64			22. 45. 47,00			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40°, 317, - 26°, 873, - 13°, 601, + 0°, 041, + 13°, 535, + 26°, 886, + 40°, 328.

(a) Cloudy. (b) The sky had just become partially clear. (c) 'The middle one of three.' (d) The noted times were 30<sup>s</sup> greater.  
 (e) 'The preceding of two.' (f) 'The last two wires have been diminished 10<sup>s</sup>.' (g) 'Only one star.' (h) 'The following of two.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h.	m.	s.	
Aug. 27	Neptune.....	20,7	34,2	47,8	1,5	15,1	28,8	42,6	22.48.1,53	+1,3	-3,6	+4,7	1,99		1,32	22.48.26,36			T.
	(a) B. (w.) xxii. 1101	36,7	50,2	3,3	17,2	30,6	44,1	57,7	22.52.17,12				17,52			22.52.41,89			T.
	(b) α Pegasi.....	19,7	33,4	46,9	1,3	15,0	28,9	42,9	22.57.1,15				1,36	24,43		22.57.25,73			T.
Aug. 28	☉ 1 L.....	12,5	26,3	39,7	53,6	7,3	20,8	34,6	10.26.53,54				53,76		1,32	10.27.18,77			T.
	☉ 2 L.....	21,7	35,2	48,7	2,6	16,2	30,0	43,7	10.29.2,58				2,80			10.29.27,82			T.
	(c) α Aquilæ.....	29,2	42,7	56,2	10,0	23,7	37,1	50,7	19.43.9,94				10,18	25,55		19.43.35,70			T.
	β Aquilæ.....	58,4	11,8	25,1	38,8	52,4	5,7	19,4	19.47.38,80				39,07	25,56		19.48.4,60			T.
	(d) α <sup>2</sup> Capricorni....	45,3	59,0	12,6	26,7	40,7	54,6	....	20.9.26,72				27,23	25,40		20.9.52,78			T.
	β Aquarii.....	41,6	55,2	8,6	22,2	35,7	49,2	2,8	21.23.22,18				22,61	25,64		21.23.48,23			T.
	μ Capricorni.....	....	21,7	35,4	49,7	3,7	17,5	....	21.44.49,60				50,13			21.45.15,77			T.
	ι Aquarii.....	21,2	35,0	48,7	2,8	16,7	30,6	44,6	21.58.2,80				3,33			21.58.28,98			T.
	☉ 1 L.....	22,3	36,5	50,7	5,4	19,7	34,1	48,6	22.6.5,33				5,88			22.6.31,54			T.
	(e) Fortuna.....	....	18,5	....	45,7	59,3	12,8	26,3	22.16.45,64				46,09			22.17.11,76			T.
	Neptune.....	13,2	26,9	40,2	54,1	7,7	21,2	34,7	22.47.54,00				54,46			22.48.20,15			T.
	α Pegasi.....	18,2	32,0	45,7	59,7	13,8	27,6	41,7	22.56.59,82				60,03	25,77		22.57.25,73			T.
Aug. 30	(f) ☉ 1 L.....	27,2	40,7	54,2	8,1	21,7	35,3	49,0	10.34.8,03		-3,9	+4,0	8,21		1,28	10.34.35,84			T.
	☉ 2 L.....	35,8	49,6	3,0	16,9	30,6	44,1	57,7	10.36.16,82				17,00			10.36.44,64			T.
	(g) β Lyræ.....	22,3	38,2	54,2	10,2	26,7	42,2	58,5	18.44.10,32				10,41	28,17		18.44.38,48			T.
	ζ Aquilæ.....	28,7	42,3	56,1	9,8	23,9	37,7	51,6	18.58.10,02				10,18	28,10		18.58.38,26			T.
	H. C. 36426.....	47,2	1,6	15,5	29,8	44,1	58,7	12,7	19.13.29,95				30,46			19.13.58,56			T.
	H. C. 36666.....	54,5	8,7	22,7	37,1	51,2	5,4	19,7	19.18.37,04				37,55			19.19.5,65			T.
	H. C. 36828.....	9,7	23,7	37,4	51,7	5,8	19,8	33,8	19.21.51,70				52,19			19.22.20,30			T.
	(h) H. C. 36981.....	41,7	55,6	9,2	23,3	37,6	51,7	5,8	19.25.23,56				24,05			19.25.52,16			T.
	(i) 53 Sagittarii....	45,2	0,0	14,3	29,2	44,2	58,7	13,7	19.30.29,33				29,88			19.30.57,99			T.
	H. C. 37439.....	54,3	9,8	24,9	40,2	55,2	10,7	25,8	19.35.40,12				40,71			19.36.8,83			T.
	H. C. 37568.....	54,0	9,3	24,2	39,7	54,5	9,6	24,6	19.38.39,42				39,99			19.39.8,11			T.
	(k) α Aquilæ.....	26,7	40,1	53,7	7,3	20,8	34,6	48,1	19.43.7,33				7,52	28,19		19.43.35,64			T.
	β Aquilæ.....	55,7	9,2	22,7	36,4	49,8	3,2	16,7	19.47.36,24				36,46	28,15		19.48.4,59			T.
	H. C. 38517.....	27,2	37,2	52,0	7,2	22,0	36,9	51,8	20.1.7,12				7,68			20.1.35,82			T.
	(l) H. C. 38705.....	24,7	38,8	52,7	6,8	20,9	35,0	49,2	20.5.6,87				7,37			20.5.35,51			T.
	α <sup>2</sup> Capricorni....	42,7	56,7	10,1	24,2	38,0	51,7	5,7	20.9.24,16				24,62	27,99		20.9.52,77			T.
	β Aquarii.....	39,1	52,7	5,9	19,7	33,4	46,7	0,3	21.23.19,69				20,07	28,18		21.23.48,28			T.
	α Aquarii.....	4,2	17,8	31,2	44,5	58,3	11,6	25,1	21.57.44,67				44,99	28,20		21.58.13,23			T.
	B. (w.) xxii. 444.	46,7	0,7	14,2	28,2	42,0	55,9	9,7	22.20.28,20				28,66			22.20.56,93			T.
	B. (w.) xxii. 519.	40,2	53,7	7,1	21,0	34,5	47,9	1,6	22.24.20,85				21,24			22.24.49,51			T.
	B. (w.) xxii. 589.	0,2	13,7	27,3	40,9	54,7	8,1	21,7	22.27.40,94				41,34			22.28.9,61			T.
	(m) B.A.C. 7892 sf..	33,7	47,0	0,8	14,7	28,7	42,6	56,3	22.31.14,83				15,29			22.31.43,56			T.
	(n) B. (w.) xxii. 748.	2,2	15,9	29,7	43,7	57,5	11,2	24,9	22.34.43,58				44,04			22.35.12,31			T.
	B. (w.) xxii. 822.	0,3	14,1	27,4	41,0	54,6	8,0	21,6	22.38.41,00				41,38			22.39.9,66			T.
	72 Aquarii.....	56,6	10,0	23,2	37,3	50,7	4,3	17,7	22.42.37,12				37,52			22.43.5,80			T.
	(o) Neptune.....	58,5	12,0	25,3	39,3	52,7	6,3	20,0	22.47.39,16				39,57			22.48.7,86			T.
	B. (w.) xxii. 1120	16,3	30,2	43,7	57,7	11,3	24,8	38,7	22.52.57,53				57,95			22.53.26,24			T.
	α Pegasi.....	15,7	29,5	43,3	57,5	11,2	25,0	39,0	22.56.57,32				57,49	28,32		22.57.25,78			T.
	φ Aquarii.....	32,6	46,0	59,2	13,2	26,7	40,2	53,5	23.6.13,06				13,44			23.6.41,74			T.
	ψ <sup>3</sup> Aquarii.....	....	22,2	....	49,4	3,1	16,7	30,5	23.10.49,41				49,83			23.11.18,14			T.
	☉ 2 L.....	4,8	18,7	32,1	46,4	0,3	14,2	28,0	23.45.46,36				46,76			23.46.15,10			T.
	30 Piscium.....	15,1	28,6	42,2	55,8	9,5	22,8	36,6	23.53.55,80				56,18			23.54.24,53			T.
	33 Piscium.....	38,5	52,0	5,2	19,3	32,7	46,2	59,8	23.57.19,10				19,48			23.57.47,83			T.
Aug. 31	☉ 1 L.....	4,0	17,7	31,2	45,0	58,5	12,1	25,9	10.37.44,91				45,10		1,34	10.38.13,98			T.
	(p) ☉ 2 L.....	....	....	40,0	53,7	7,2	20,9	34,2	10.39.53,58				53,77			10.40.22,66			T.
	Arcturus.....	42,8	57,0	11,1	25,6	39,9	54,2	8,5	14.8.25,59				25,77	29,13		14.8.54,85			T.
	(q) μ <sup>1</sup> Sagittarii....	43,6	58,2	12,3	26,7	41,3	55,7	10,2	18.4.26,86				27,39	29,20		18.4.56,69			T.
	(r) β Lyræ.....	....	37,0	52,7	9,2	25,2	41,2	....	18.44.9,06				9,15	29,41		18.44.38,49			T.
	(s) B.A.C. 6485.....	30,7	45,2	59,7	14,7	29,1	43,7	58,7	18.52.14,54				15,08			18.52.44,43			T.
	ο Sagittarii.....	37,6	52,0	6,4	21,2	35,7	50,1	4,7	18.55.21,10				21,63			18.55.50,98			T.
	(t) ζ Aquilæ.....	27,2	41,1	54,7	8,7	22,7	36,4	50,3	18.58.8,73				8,89	29,38		18.58.38,24			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

(a) The recorded time was 1<sup>m</sup> less. (b) The observer was much disturbed by noise. (c) The sky had just become clear. (d) Hid at last by cloud. (e) Wire II was set down 14.5. (f) Cloudy. (g) 'Counting 1<sup>s</sup> in advance.' Correction applied. (h) 'The south-following of three.' (i) 'The preceding of two of equal magnitude 17<sup>s</sup> apart.' (k) The noted times have been increased 20<sup>s</sup>. (l) 'The preceding of two.' (m) 'The sf. of a close double star.' (n) 'The north-following of two.' The other is B. (w.) xxii. 747. (o) 'Another object north-following about 3<sup>s</sup>.' (p) Cloudy. Wire III has been increased by 1<sup>s</sup>. (q) Disturbance. (r) Hurried at first. (s) Bad definition. (t) Between this and the preceding observation the Telescope was accidentally struck on the East side.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.											
Aug. 31	$\beta$ Aquarii .....	37,7	51,3	4,7	18,3	32,0	45,3	59,0	21. 23. 18,33	+1,3	-3,9	+4,0	18,71	29,54	1,34	21. 23. 48,20	T.		
	$\alpha$ Aquarii .....	3,1	16,4	29,9	43,5	56,7	10,2	23,7	21. 57. 43,36				43,68	29,51		21. 58. 13,20	T.		
	(a) Fortuna .....	22,7	36,7	49,8	3,7	....	....	....	22. 14. 3,61				4,01			22. 14. 33,54	T.		
	(b) Neptune .....	50,7	4,7	18,0	31,9	45,3	....	12,6	22. 47. 31,73				32,14			22. 48. 1,70	T.		
	(c) $\alpha$ Pegasi .....	14,6	28,3	42,0	56,1	10,2	24,0	37,7	22. 56. 56,13				56,30	29,52		22. 57. 25,87	T.		
Sept. 1	(c) $\odot$ 1 L. ....	40,7	54,2	7,5	21,4	....	....	....	10. 41. 21,39				21,59		1,48	10. 41. 51,83	T.		
	$\odot$ 2 L. ....	49,2	2,7	16,1	30,2	43,7	57,2	10,8	10. 43. 29,98				30,18			10. 44. 0,42	T.		
	$\alpha$ Aquarii .....	1,7	15,2	28,4	42,0	55,7	8,8	22,3	21. 57. 42,01				42,33	30,86			T.		
	(d) Fortuna .....	29,0	42,7	56,0	10,0	23,4	36,7	50,7	22. 13. 9,78				10,18			22. 13. 41,13	T.		
	B.A.C. 7804 ....	....	50,2	3,4	17,3	30,7	44,7	....	22. 15. 17,26				17,66			22. 15. 48,61	T.		
	(e) Neptune .....	43,7	56,9	10,3	24,5	37,7	51,4	5,1	22. 47. 24,23				24,64			22. 47. 55,63	T.		
	$\alpha$ Pegasi .....	13,1	27,1	40,6	54,5	8,4	22,3	36,1	22. 56. 54,59				54,76	31,06			T.		
	(f) Irene .....	....	....	....	....	....	....	6,0	23. 18. 23,42				23,93			23. 18. 54,94	T.		
	(g) Procyon .....	21,2	34,7	47,7	1,6	15,2	28,6	42,0	7. 31. 1,57				1,79	31,62	1,46	7. 31. 33,37	T.		
	(h) Pollux .....	57,7	13,1	28,2	43,7	59,0	14,3	29,5	7. 35. 43,64				43,77	31,64		7. 36. 15,35	T.		
Sept. 2	(g)(i) $\odot$ 1 L. ....	16,3	30,2	43,3	57,2	11,0	24,7	38,2	10. 44. 57,27				57,47			10. 45. 29,24	T.		
	$\odot$ 2 L. ....	25,0	38,7	52,1	5,9	19,6	33,3	46,7	10. 47. 5,90				6,10			10. 47. 37,88	T.		
	(k) $\beta$ Leonis .....	....	30,7	43,7	58,3	12,3	26,0	....	11. 40. 58,20				58,36	31,93		11. 41. 30,19	T.		
	(g) Polaris SP. ....	....	15,0	52,0	....	....	54,5	40,5	13. 5. 35,74				47,19				T.		
	(l) Arcturus .....	39,7	54,0	8,2	22,7	37,0	51,2	5,6	14. 8. 22,63				22,81	32,06		14. 8. 54,79	T.		
	$\zeta$ Aquilæ .....	....	38,2	51,7	5,6	19,6	33,7	....	18. 58. 5,76				5,92	32,32		18. 58. 38,20	T.		
	$\gamma$ Aquilæ .....	2,2	15,8	29,2	42,9	56,7	10,1	23,7	19. 38. 42,94				43,11	32,23		19. 39. 15,43	T.		
	$\alpha$ Aquilæ .....	22,3	35,9	49,2	3,2	16,4	30,3	44,0	19. 43. 3,04				3,23	32,44		19. 43. 35,55	T.		
	$\beta$ Aquilæ .....	51,7	5,0	18,4	32,2	45,7	59,2	12,7	19. 47. 32,13				32,35	32,23		19. 48. 4,67	T.		
	B.A.C. 6878 .....	43,7	58,1	12,3	27,7	42,0	56,6	11,2	19. 54. 27,37				27,91			19. 55. 0,24	T.		
	H. C. 38339 .....	....	30,7	44,7	59,1	13,3	27,6	....	19. 56. 59,08				59,59			19. 57. 31,92	T.		
	H. C. 38503 .....	57,3	11,7	25,7	40,1	54,3	8,7	22,7	20. 0. 40,07				40,58			20. 1. 12,92	T.		
	H. C. 38705 .....	20,2	34,7	48,7	2,6	16,8	30,8	44,9	20. 5. 2,67				3,17			20. 5. 35,51	T.		
	$\alpha^2$ Capricorni .....	38,7	52,3	5,9	20,1	33,8	47,6	1,5	20. 9. 19,98				20,44	32,15		20. 9. 52,79	T.		
	$\alpha$ Aquarii .....	0,2	13,7	26,7	40,6	54,1	7,3	20,7	21. 57. 40,47				40,79	32,40		21. 58. 13,25	T.		
	(c) B. (w.) xxii. 15. ....	30,7	44,7	58,7	12,6	26,7	40,7	54,6	22. 1. 12,67				13,15			22. 1. 45,61	T.		
	(m) B. (w.) xxii. 91. ....	56,0	9,7	23,7	37,5	51,5	5,3	19,2	22. 4. 37,56				38,04			22. 5. 10,50	T.		
	(n) Fortuna .....	....	49,3	2,7	16,6	30,1	43,7	....	22. 12. 16,48				16,89			22. 12. 49,36	T.		
	$\sigma$ Aquarii .....	37,1	50,7	4,3	18,5	32,0	45,7	59,6	22. 22. 18,27				18,70			22. 22. 51,18	T.		
	B. (w.) xxii. 548 .....	1,6	15,0	28,4	42,2	55,7	9,1	22,6	22. 25. 42,08				42,45			22. 26. 14,93	T.		
	(o) B. (w.) xxii. 617 .....	3,2	16,7	30,5	44,6	58,3	12,1	25,7	22. 28. 44,44				44,88			22. 29. 17,37	T.		
	B. (w.) xxii. 752 .....	2,1	16,0	29,3	43,3	56,8	10,6	24,2	22. 34. 43,18				43,59			22. 35. 16,08	T.		
	B. (w.) xxii. 814 .....	6,7	20,6	34,0	48,2	2,0	15,6	29,2	22. 37. 48,05				48,49			22. 38. 20,99	T.		
	H. C. 44661. ....	21,0	34,8	48,6	3,0	16,7	30,7	44,6	22. 42. 2,77				3,25			22. 42. 35,75	T.		
	Neptune .....	....	49,6	2,8	16,6	30,2	43,8	....	22. 47. 16,60				17,01			22. 47. 49,52	T.		
	$\alpha$ Pegasi .....	11,6	25,5	39,0	53,3	7,0	20,8	34,6	22. 56. 53,11				53,28	32,55		22. 57. 25,80	T.		
Sept. 3	$\odot$ 1 L. ....	52,3	5,7	19,4	33,3	46,8	0,6	14,0	10. 48. 33,16				33,36		1,44	10. 49. 6,56	T.		
	(p) $\odot$ 2 L. ....	0,7	14,3	27,7	41,7	55,2	....	22,7	10. 50. 41,58				41,78			10. 51. 14,98	T.		
	Arcturus .....	38,2	52,7	6,7	21,2	35,7	49,7	4,1	14. 8. 21,18				21,36	33,50		14. 8. 54,76	T.		
	$\mu^1$ Sagittarii .....	39,2	53,7	8,0	22,7	36,9	51,5	5,6	18. 4. 22,51				23,04	33,50		18. 4. 56,67	T.		
	(q) $\delta$ Ursæ Minoris .....	16,0	3,5	46,2	....	24,7	9,7	58,0	18. 19. 36,47				32,18				T.		
	$\gamma$ Aquilæ .....	0,2	14,0	27,6	41,3	55,2	8,8	22,3	19. 38. 41,34				41,51	33,82		19. 39. 15,24	T.		
	$\alpha$ Aquilæ .....	21,1	34,5	48,1	1,7	15,2	28,8	42,7	19. 43. 1,73				1,92	33,74		19. 43. 35,65	T.		
	$\beta$ Aquilæ .....	....	3,7	17,2	30,7	44,0	57,7	....	19. 47. 30,66				30,88	33,69		19. 48. 4,62	T.		
	$\alpha$ Aquarii .....	58,7	12,2	25,4	39,1	52,6	6,0	19,4	21. 57. 39,06				39,38	33,82		21. 58. 13,25	T.		
	Fortuna .....	42,8	56,2	9,7	23,8	37,6	50,8	4,7	22. 11. 23,66				24,07			22. 11. 57,95	T.		
	Irene .....	....	....	23,2	....	52,0	6,3	19,9	23. 16. 37,60				38,11			23. 17. 12,05	T.		
Sept. 4	$\alpha$ Serpentis .....	43,7	57,2	10,7	24,3	38,0	51,5	5,0	15. 36. 24,34				24,54	34,98	1,43	15. 36. 59,49	T.		
	Antares .....	1,3	16,3	31,0	46,2	1,2	16,1	30,9	16. 19. 46,15				46,72	34,86		16. 20. 21,71	T.		
	$\zeta$ Aquilæ .....	21,3	35,2	48,8	2,9	16,7	30,7	44,6	18. 58. 2,88				3,04	35,17		18. 58. 38,19	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.317, -26<sup>s</sup>.873, -13<sup>s</sup>.601, +0<sup>s</sup>.041, +13<sup>s</sup>.535, +26<sup>s</sup>.886, +40<sup>s</sup>.328.

(a) Another object south-following by 17<sup>s</sup> was also observed. (b) 'The south-preceding of two.' Cloud at wire VI. (c) Cloudy. (d) 'The most southern of three.' (e) 'The preceding object.' (f) Wires missed by observing another object. (g) Unsteadiness. (h) 'The counting was 1<sup>s</sup> slow.' (i) Bad definition. (j) In great motion and seen with much difficulty. (k) A shutter in the way. (l) 'The following and brighter of two,' the other being B. (w.) xxii. 82. (m) 'The counting 10<sup>s</sup> in excess.' (n) 'A star of Mag. 7 and nearly the same N.P.D. preceded.' (o) 'The counting 10<sup>s</sup> in excess.' (p) Cloudy at wires VI and VII. The last wire taken without the dark glass. (q) 'Good.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Sept. 4	(a) $\beta$ Aquilæ.....	48,7	2,1	15,3	29,1	42,7	56,1	9,6	19.47.29,09	+1,3	-3,9	+4,0	29,31	35,25	1,43	19.48.45,1	T.		
Sept. 8	H. C. 34749.....	39,2	53,6	7,4	21,7	35,9	49,7	4,0	18.36.21,64		-3,6	+3,4	22,11		1,26	18.37.2,38	T.		
	(b) H. C. 34884.....	43,7	57,7	11,8	26,2	40,7	54,7	8,7	18.39.26,22				26,70			18.40.6,97	T.		
	$\beta$ Lyrae.....	9,6	25,8	41,7	58,2	14,2	30,2	46,2	18.43.57,99				58,09	40,32		18.44.38,36	T.		
	H. C. 38705.....	12,1	26,5	40,3	54,7	8,7	22,7	36,7	20.4.54,53				54,99			20.5.35,33	T.		
	$\alpha^3$ Capricorni....	30,7	44,3	58,0	12,0	25,7	39,6	53,2	20.9.11,93				12,36	40,18		20.9.52,71	T.		
	(c) H. C. 39125.....	30,0	44,1	57,7	12,1	26,2	40,2	54,0	20.14.12,04				12,50			20.14.52,85	T.		
	(d) $\pi$ Capricorni....	29,7	43,9	57,9	12,2	26,2	40,6	54,8	20.18.12,18				12,65			20.18.53,01	T.		
	(e) B.A.C. 7069.....	11,0	25,7	40,2	55,0	9,7	24,1	38,5	20.22.54,89				55,39			20.23.35,75	T.		
	B. (w.) xx. 648....	....	53,5	7,0	21,1	34,9	48,6	....	20.25.21,02				21,45			20.26.1,81	T.		
	B.A.C. 7115.....	4,7	18,8	32,7	47,0	1,1	15,3	29,4	20.28.47,00				47,47			20.29.27,84	T.		
	(f) B.A.C. 7151.....	34,7	49,0	3,0	17,2	31,3	45,6	59,7	20.32.17,22				17,69			20.32.58,06	T.		
	(g) B. (w.) xx. 932..	8,3	22,7	....	50,6	4,7	18,6	32,7	20.35.50,58				51,03			20.36.31,40	T.		
	B. (w.) xx. 1051..	33,0	47,0	0,8	15,0	29,0	42,8	56,7	20.40.14,90				15,35			20.40.55,72	T.		
	H. C. 40256.....	....	41,7	55,9	10,7	25,2	39,6	....	20.43.10,62				11,12			20.43.51,50	T.		
	B. (w.) xx. 1203..	53,2	6,9	20,7	34,7	48,5	2,1	16,2	20.46.34,61				35,04			20.47.15,42	T.		
	$\beta$ Aquarii.....	26,8	40,3	53,7	7,4	21,1	34,6	48,1	21.23.7,43				7,79	40,45		21.23.48,20	T.		
	$\alpha$ Aquarii.....	52,1	5,3	18,7	32,6	46,0	59,3	12,8	21.57.32,40				32,71	40,49		21.58.13,15	T.		
	(h) Fortuna.....	....	....	56,0	....	....	....	....	22.7.9,76				10,14			22.7.50,59	T.		
	Neptune.....	51,0	4,5	17,9	31,8	45,4	59,0	12,6	22.46.31,74				32,12			22.47.12,61	T.		
	B. (w.) xxii. 1068	57,1	10,9	24,3	38,1	51,7	5,3	18,7	22.50.38,02				38,40			22.51.18,89	T.		
	(i) B. (w.) xxii. 1136	44,9	58,7	12,2	25,9	39,4	52,7	6,3	22.53.25,73				26,10			22.54.6,59	T.		
	$\alpha$ Pegasi.....	3,6	17,4	31,2	45,3	59,0	12,9	26,9	22.56.45,19				45,35	40,51		22.57.25,84	T.		
	B. (w.) xxii. 1269	....	5,0	18,3	32,0	45,7	58,8	12,3	22.59.31,96				32,27			23.0.12,77	T.		
	Irene.....	....	41,2	....	....	....	....	53,0	23.12.9,97				10,45			23.12.50,96	T.		
Sept. 9	(k) B.A.C. 7352....	8,7	23,0	36,3	51,0	4,9	18,4	32,6	21.2.50,70				51,15		1,28	21.3.32,80	T.		
	H. C. 41200.....	37,0	51,1	4,7	19,0	32,8	46,9	0,7	21.6.18,89				19,34			21.7.0,99	T.		
	B. (w.) xxi. 222..	4,7	18,3	32,0	46,1	0,0	13,6	27,6	21.9.46,04				46,47			21.10.28,13	T.		
	B. (w.) xxi. 346..	50,7	4,2	17,7	31,2	45,5	59,1	12,6	21.14.31,57				31,98			21.15.13,64	T.		
	B. (w.) xxi. 422..	6,0	19,7	33,2	47,2	0,8	14,6	28,3	21.17.47,12				47,53			21.18.29,20	T.		
	H. C. 41760.....	12,5	26,3	40,0	54,0	7,9	21,7	35,7	21.20.54,01				54,46			21.21.36,13	T.		
	(l) $\beta$ Aquarii.....	25,2	39,2	52,6	6,3	19,7	33,2	46,7	21.23.6,13				6,49	41,74		21.23.48,16	T.		
	B. (w.) xxi. 655..	13,7	27,2	40,8	54,9	8,7	22,2	36,0	21.26.54,79				55,20			21.27.36,87	T.		
	B. (w.) xxi. 719..	6,6	20,3	33,7	47,7	1,2	15,0	28,7	21.29.47,60				47,99			21.30.29,67	T.		
	(m) B. (w.) xxi. 835..	22,0	35,6	49,6	3,4	17,0	30,7	44,6	21.34.3,27				3,70			21.34.45,38	T.		
	(n) H. C. 42467.....	40,2	54,0	7,3	21,5	35,1	48,8	2,6	21.39.21,35				21,74			21.40.3,43	T.		
	$\alpha$ Aquarii.....	50,8	4,6	17,7	31,4	44,7	58,2	11,6	21.57.31,28				31,58	41,62		21.58.13,28	T.		
	(o) Fortuna.....	40,7	54,3	8,2	21,9	35,4	49,1	2,7	22.6.21,75				22,13			22.7.3,84	T.		
	Neptune.....	43,7	57,2	10,7	24,5	38,1	51,6	5,3	22.46.24,44				24,82			22.47.6,57	T.		
$\alpha$ Pegasi.....	2,3	16,2	29,8	44,2	57,7	11,7	25,6	22.56.43,93				44,09	41,78		22.57.25,85	T.			
(p) Irene.....	....	....	....	....	....	....	58,3	23.11.15,52				16,00			23.11.57,77	T.			
Sept. 10	(q) B. (w.) xxi. 378..	15,2	28,7	42,5	56,5	10,2	23,7	37,6	21.15.56,34	-17,0			55,50		1,33	21.16.38,47	T.		
	B. (w.) xxi. 475..	18,3	32,0	45,7	59,7	13,7	27,3	41,1	21.19.59,69				58,86			21.20.41,83	T.		
	$\beta$ Aquarii.....	25,6	39,0	52,3	6,2	19,7	33,2	46,6	21.23.6,09				5,22	43,00		21.23.48,19	T.		
	(r) B. (w.) xxi. 638..	42,7	56,1	9,7	23,7	37,4	50,6	4,3	21.26.23,50				22,64			21.27.5,62	T.		
	(s) $\alpha$ Aquarii.....	50,6	4,3	17,5	31,3	44,7	58,2	11,6	21.57.31,17				30,25	42,94		21.58.13,26	T.		
	$\alpha$ Pegasi.....	2,2	16,0	29,7	43,9	58,1	11,7	25,6	22.56.43,88				42,77	43,10		22.57.25,83	T.		
Sept. 11	(t) $\alpha$ Aquarii.....	49,3	2,7	16,2	29,7	43,5	56,8	10,2	21.57.29,78				28,86	44,33	1,34		T.		
	(u) Fortuna.....	....	....	35,7	49,3	3,7	16,8	30,3	22.4.49,53				48,67			22.5.33,04	T.		
	Neptune.....	30,1	43,7	57,1	11,0	24,7	38,2	51,7	22.46.10,93				10,06			22.46.54,47	T.		
	$\alpha$ Pegasi.....	....	14,7	28,3	42,7	56,6	10,3	24,2	22.56.42,53				41,42	44,45			T.		
	Irene.....	....	....	....	....	44,3	....	13,0	23.9.29,99				29,17			23.10.13,60	T.		
Sept. 13	(d)(x) $\beta$ Aquarii.....	21,6	35,1	48,4	2,2	15,7	29,1	42,7	21.23.2,11		-4,9		1,19	47,02	1,27	21.23.48,14	T.		
	(r)(d) $\alpha$ Aquarii.....	46,9	0,3	13,3	27,3	41,0	54,1	7,5	21.57.27,20				26,23	46,96		21.58.13,21	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,317, -26°,873, -13°,601, +0°,041, +13°,535, +26°,886, +40°,328. From Sept. 10, -40°,351, -26°,906, -13°,635, +0°,008, +13°,655, +26°,893, +40°,336.

(a) Very faint from cloud. (b) 'The north-preceding of two.' (c) Disturbance by noise. (d) Bad definition. (e) 'The preceding star.' See July 21. (f) The noted time was 1<sup>m</sup> greater. (g) 'Disturbance between wires II and III; counting found 1<sup>s</sup> in advance.' The last four wires have been diminished by 1<sup>s</sup>. (h) A brighter object preceding this by 2<sup>s</sup>.91 was observed at four wires. (i) 'A brighter south-preceding.' (j) 'A faint star precedes.' (k) Observed confusedly. (l) Low in the field when it passed wire I. (m) 'One of equal mag. south-preceding.' (n) 'A faint star precedes.' (o) Wire I was set down 44,7; altered conjecturally. (p) Seen only by glimpses, would bear no illumination. (q) At noon of Sept. 10 Mr Todd found wire V broken; I put in a new wire before the observations of that day. (r) Cloudy. (s) Extremely faint from cloud. (t) No definition: the sky had just cleared. (u) 'Good.' (v) Tremor.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Sept. 13	(a) Fortuna .....	40,0	53,7	7,0	20,9	34,8	48,1	1,6	22. 3. 20,87	-17,0	-4,9	+3,4	19,97		1,23	22. 4. 6,96			T.
	Neptune .....	14,9	28,8	42,2	56,1	9,9	23,2	37,0	22. 45. 56,01				55,10			22. 46. 42,12			T.
	α Pegasi .....	58,3	12,2	25,8	40,1	54,2	7,7	21,6	22. 56. 39,98				38,80	47,08		22. 57. 25,83			T.
	α Andromedæ ...	15,5	30,9	46,1	1,6	17,2	32,0	47,3	0. 0. 1,51				0,16	47,14		0. 0. 47,25			T.
	(a) β Ceti .....	43,1	57,3	11,2	25,7	40,2	54,2	8,3	0. 35. 25,72				24,89	46,99		0. 36. 12,01			T.
	(a) (b) Polaris .....	32,0	13,0	50,5	41,5	29,0	....	42,0	1. 5. 98,41				39,48			1. 6. 26,63			T.
	(c) α Hydræ .....	51,6	5,0	18,3	32,1	46,1	59,3	12,9	9. 19. 32,18				31,29	47,61	1,18	9. 20. 18,87			T.
	Regulus .....	1,2	14,9	28,7	42,7	56,7	10,2	24,0	9. 59. 42,63				41,47	47,66		10. 0. 29,08			T.
Sept. 14	(d) ☉ 1 L .....	17,0	30,5	43,7	57,6	11,2	24,6	38,0	11. 27. 57,52				56,48			11. 28. 44,16			T.
	☉ 2 L .....	24,8	38,3	51,7	5,5	19,1	32,4	45,9	11. 30. 5,39				4,35			11. 30. 52,04			T.
	(e) Polaris SP. ....	....	17,0	50,5	40,0	29,5	1,5	43,0	13. 4. 39,35				99,14			13. 6. 26,90			T.
	(f) Polaris SP. M. ...	29,0	10,8	54,0	40,0	23,6	6,7	51,5	13. 4. 39,68				99,47			13. 6. 27,23			C.
	(g) (f) Spica .....	56,3	9,8	23,6	37,3	51,1	4,7	18,2	13. 16. 37,29				36,40	47,77		13. 17. 24,17			T.
	(h) δ Ophiuchi .....	8,9	22,6	35,8	....	3,2	....	30,0	16. 5. 49,49				48,54	47,84		16. 6. 36,45			T.
Sept. 16	β Lyrae .....	1,2	17,2	33,0	49,3	5,7	21,6	37,5	18. 43. 49,36		-4,3	+3,8	47,95	50,28	1,26	18. 44. 38,23			T.
	ζ Aquilæ .....	7,2	21,1	34,7	48,8	2,9	16,5	30,1	18. 57. 48,76				47,63	50,40		18. 58. 37,93			T.
	γ Aquilæ .....	44,7	58,5	12,0	25,9	39,7	53,2	6,7	19. 38. 25,81				24,71	50,45		19. 39. 15,04			T.
	α Aquilæ .....	5,4	18,9	32,3	46,3	0,0	13,5	27,0	19. 42. 46,20				45,14	50,36		19. 43. 35,47			T.
	β Aquilæ .....	34,3	48,1	1,5	15,2	28,9	42,1	55,6	19. 47. 15,10				14,07	50,33		19. 48. 4,41			T.
	(i) β Aquarii .....	18,2	31,6	45,0	58,7	12,6	25,4	39,2	21. 22. 58,67				57,80	50,40		21. 23. 48,22			T.
	α Aquarii .....	43,3	56,7	10,1	23,6	37,5	50,5	4,0	21. 57. 23,67				22,74	50,44		21. 58. 13,19			T.
	(k) Fortuna .....	37,1	50,7	4,0	18,0	31,6	45,1	59,0	22. 1. 17,93				17,07			22. 2. 7,53			T.
	(l) Neptune .....	54,0	7,6	20,9	35,0	48,7	2,0	15,7	22. 45. 34,84				33,98			22. 46. 24,48			T.
	α Pegasi .....	54,7	8,7	22,7	36,7	50,8	4,2	18,2	22. 56. 36,57				35,44	50,45		22. 57. 25,94			T.
	(m) β Ceti .....	39,5	53,7	7,7	22,3	36,6	50,7	4,8	0. 35. 22,18				21,39	50,54		0. 36. 11,98			T.
	Polaris .....	33,3	....	48,5	36,5	24,0	0,5	40,5	1. 5. 96,69				38,40			1. 6. 29,02			T.
	(n) Polaris M. ....	19,5	5,0	48,0	36,5	19,0	3,0	46,5	1. 5. 93,62				35,33			1. 6. 25,95			T.
Sept. 17	(o) ☉ 1 L .....	59,7	13,0	26,2	40,0	54,2	7,3	20,6	11. 38. 40,14				39,16		1,32	11. 39. 30,44			T.
	☉ 2 L .....	....	21,0	34,2	48,5	1,9	15,3	....	11. 40. 48,18				47,20			11. 41. 38,48			T.
	(f) (p) Polaris SP. ....	31,0	13,7	46,0	37,0	24,7	56,0	43,0	13. 4. 35,91				35,15			13. 6. 26,51			T.
	(f) (p) Polaris SP. M. ...	23,5	9,0	52,0	37,0	22,0	5,0	47,0	13. 4. 36,81				36,05			13. 6. 27,41			T.
	(g) Spica .....	....	6,7	19,9	33,8	47,6	1,0	14,6	13. 16. 33,76				32,91	51,24		13. 17. 24,28			T.
	(f) Arcturus .....	21,6	35,8	49,7	4,7	19,0	33,0	47,3	14. 8. 4,44				3,29	51,41		14. 8. 54,71			T.
	ε Bootis .....	55,9	10,8	25,8	41,2	56,8	11,7	26,7	14. 37. 41,27				40,00	51,39		14. 38. 31,44			T.
	γ Aquilæ .....	43,6	57,2	10,6	24,3	38,3	51,7	5,6	19. 38. 24,47				23,37	51,78		19. 39. 15,09			T.
	α Aquilæ .....	4,2	17,6	31,2	45,0	58,7	12,1	25,7	19. 42. 44,93				43,87	51,62		19. 43. 35,59			T.
	β Aquilæ .....	33,2	46,7	0,2	13,9	27,6	40,9	54,2	19. 47. 13,81				12,78	51,61		19. 48. 4,51			T.
	H. C. 38357 .....	19,2	34,0	48,2	3,0	17,7	32,0	46,5	19. 57. 2,94				2,14			19. 57. 53,88			T.
	H. C. 38705 .....	2,0	16,2	30,6	44,7	58,8	12,7	26,7	20. 4. 44,53				43,72			20. 5. 35,46			T.
	H. C. 38839 .....	54,2	8,8	23,1	37,6	52,6	6,7	21,2	20. 7. 37,75				36,94			20. 8. 28,69			T.
	B.A.C. 6987. ....	22,7	37,0	51,1	5,7	20,2	34,4	48,7	20. 11. 5,69				4,89			20. 11. 56,64			T.
	B. (w.) xx. 346. ....	....	1,1	14,9	29,1	43,3	56,9	....	20. 13. 29,06				28,25			20. 14. 20,00			T.
	H. C. 39249 .....	23,2	37,5	51,6	6,0	20,3	34,2	48,6	20. 17. 5,92				5,11			20. 17. 56,87			T.
	β Aquarii .....	16,7	30,2	43,6	57,4	11,1	24,6	37,9	21. 22. 57,36				56,49	51,70		21. 23. 48,31			T.
	α Aquarii .....	42,0	55,6	8,7	22,4	36,0	49,2	2,6	21. 57. 22,35				21,42	51,76		21. 58. 13,27			T.
	(r) Fortuna .....	58,7	12,1	25,7	39,3	53,2	6,7	20,4	22. 0. 39,45				38,59			22. 1. 30,44			T.
	Neptune .....	46,6	0,2	13,6	27,7	41,4	54,8	8,3	22. 45. 27,52				26,66			22. 46. 18,55			T.
	α Pegasi .....	53,7	7,6	21,2	35,3	49,4	3,1	16,8	22. 56. 35,30				34,17	51,72		22. 57. 26,07			T.
	α Andromedæ ...	10,8	26,2	41,2	56,7	12,3	27,2	42,4	23. 59. 56,69				55,40	51,94		0. 0. 47,36			T.
	(s) Polaris M. ....	18,5	8,0	51,5	34,5	16,5	0,0	43,0	1. 6. 32,83				34,54			1. 6. 26,56			T.
Sept. 20	(t) ☉ 2 L .....	....	....	....	28,6	42,2	55,6	9,1	11. 51. 28,60	+16,7	-0,8	+1,8	30,15		1,23	11. 52. 24,95			T.
	H. C. 41070. ....	18,7	32,7	46,6	0,6	14,7	28,7	42,5	21. 3. 0,64				2,21			21. 3. 57,48			T.
	(u) H. C. 41200. ....	22,2	36,2	49,8	4,1	18,2	31,9	46,2	21. 6. 4,08				5,65			21. 7. 0,92			T.
	B. (w.) xxi. 248. ....	50,7	4,6	18,1	32,2	45,9	59,9	13,3	21. 10. 32,10				33,67			21. 11. 28,94			T.
	B. (w.) xxi. 357. ....	9,2	22,9	36,3	50,2	4,0	17,7	31,7	21. 14. 50,28				51,83			21. 15. 47,11			T.

ILLUMINATION WEST. From Sept. 20, EAST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,351$ ,  $-26^s,906$ ,  $-13^s,635$ ,  $+0^s,008$ ,  $+13^s,655$ ,  $+26^s,893$ ,  $+40^s,336$ . From Sept. 20,  $-40^s,336$ ,  $-26^s,893$ ,  $-13^s,655$ ,  $-0^s,008$ ,  $+13^s,635$ ,  $+26^s,906$ ,  $+40^s,351$ .

(a) Cloudy. (b) Barely seen at last. (c) Very faint. (d) Unsteady. (e) Wire IV by C. (f) Great motion. (g) Very faint.  
 (h) Clouds. (i) 'Not good.' (k) Extremely faint and difficult to observe. (l) Faint. (m) 'A large image.' (n) Steady after the  
 first three wires. (o) Fringed and very tremulous. (p) Occasionally well defined and steady. (q) Scarcely visible and very tremulous. (r) 'Good.'  
 (s) Unsteadiness and bad definition. (t) Clouds passing very rapidly. (u) 'A bright star follows.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.		
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Asimuth Error.				h.	m.	s.			
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"			
Sept.20	B. (w.) XXI. 418.	46,6	0,7	13,9	27,7	41,7	55,6	9,2	21. 17. 27,92	+16,7	-0,8	+1,8	29,49	55,27	1,23	21. 18. 24,77	T.				
	(a) B. (w.) XXI. 493.	43,8	57,6	11,0	24,7	38,7	52,2	5,9	21. 20. 24,84				26,39			21. 21. 21,67	T.				
	β Aquarii.....	10,7	24,2	37,5	51,3	5,1	18,7	32,0	21. 22. 51,35				52,89			21. 29. 22,86	T.				
	(b) B. (w.) XXI. 695.	44,7	58,7	12,0	26,0	40,0	53,3	7,4	21. 28. 26,02				27,57			1. 6. 28,78	T.				
	α Andromedæ....	....	20,1	34,7	50,4	5,8	21,1	36,2	23. 59. 50,42				51,93					T.			
	(c) Polaris M. ....	41,5	25,5	10,0	52,0	38,5	24,0	8,5	1. 4. 54,60				33,30					T.			
Sept.21	(d) ξ <sup>a</sup> Sagittarii....	14,2	28,6	42,7	57,6	12,2	26,7	41,0	18. 47. 57,57		-1,1	59,22	56,42	1,38	18. 48. 55,60	T.					
	ζ Aquilæ.....	58,6	12,5	26,0	39,7	54,0	7,7	21,6	18. 57. 40,02			41,52			18. 58. 37,91	T.					
	γ <sup>1</sup> L.....	26,2	41,2	56,5	12,0	27,3	42,3	57,7	19. 0. 11,88			13,60			19. 1. 9,99	T.					
	(e) h <sup>a</sup> Sagittarii....	0,9	15,9	30,6	45,4	0,8	15,2	30,2	19. 26. 45,57			47,29			19. 27. 43,71	T.					
	e <sup>a</sup> Sagittarii....	25,0	38,8	52,7	6,8	21,2	35,0	49,1	19. 33. 6,94			8,52			19. 34. 4,94	T.					
	γ Aquilæ.....	....	49,7	3,2	17,0	30,8	44,6	....	19. 38. 17,06			18,57			19. 39. 15,00	T.					
	α Aquilæ.....	56,7	10,2	23,7	37,3	51,2	4,7	18,2	19. 42. 37,43			38,94			19. 43. 35,38	T.					
	H. C. 41760.....	56,2	10,1	23,8	37,8	52,0	5,8	19,7	21. 20. 37,92			39,49			21. 21. 36,02	T.					
	β Aquarii.....	9,6	23,1	36,3	50,0	3,7	17,1	30,7	21. 22. 50,07			51,60			21. 23. 48,13	T.					
	B. (w.) XXI. 638.	26,5	40,3	53,5	7,2	21,2	34,8	48,5	21. 26. 7,43			8,97			21. 27. 5,51	T.					
	B. (w.) XXI. 695.	43,4	57,2	10,7	24,7	38,7	52,2	6,1	21. 28. 24,71			26,25			21. 29. 22,79	T.					
	B. (w.) XXI. 774.	53,7	7,2	21,0	35,2	49,3	3,1	17,1	21. 31. 35,23			36,80			21. 32. 33,34	T.					
	B. (w.) XXI. 861.	59,2	12,8	26,3	40,3	54,2	7,8	21,7	21. 34. 40,32			41,86			21. 35. 38,40	T.					
	(f) H. C. 42429....	12,7	26,2	39,7	53,3	7,2	20,7	34,2	21. 37. 53,43			54,97			21. 38. 51,52	T.					
	(g) B. (w.) XXI. 1025.	35,8	49,2	2,7	16,3	30,6	43,6	57,1	21. 42. 16,47			18,02			21. 43. 14,57	T.					
	B. (w.) XXI. 1106	26,7	40,3	53,9	8,0	21,8	35,7	49,3	21. 46. 7,96			9,52			21. 47. 6,07	T.					
	B. (w.) XXI. 1246	39,0	53,1	6,6	20,7	34,7	48,1	1,8	21. 52. 20,57			22,11			21. 53. 18,67	T.					
	30 Aquarii.....	....	6,4	19,7	33,6	47,2	0,7	....	21. 54. 33,52			35,04			21. 55. 31,60	T.					
	Fortuna.....	39,2	52,9	6,3	20,1	33,9	47,6	1,1	21. 58. 20,15			21,69			21. 59. 18,26	T.					
	Neptune.....	16,4	30,1	43,4	57,2	11,0	24,3	38,0	22. 44. 57,20			58,74			22. 45. 55,35	T.					
	α Pegasi.....	46,2	0,2	13,7	27,7	41,8	55,6	9,6	22. 56. 27,83			29,32			22. 57. 25,94	T.					
	α Andromedæ....	....	18,7	33,8	49,2	4,7	19,7	....	23. 59. 49,22			50,71			0. 0. 47,39	T.					
	β Ceti.....	31,2	45,3	59,5	13,7	28,1	42,1	56,6	0. 35. 13,78			15,39			0. 36. 12,11	T.					
	(h) Polaris.....	50,0	28,5	3,0	54,5	41,5	17,0	2,0	1. 4. 53,79			31,87			1. 6. 28,61	T.					
	(e) Polaris M. ....	42,5	28,5	11,0	54,5	40,5	25,0	8,5	1. 4. 56,10			34,18			1. 6. 30,92	T.					
	Sept.22	⊙ 1 L.....	48,2	2,1	15,3	29,0	42,9	56,1	9,6			11. 56. 29,03						30,57	1,53	11. 57. 28,12	T.
		(i) ⊙ 2 L.....	56,7	10,2	23,2	36,9	....	3,9	17,4			11. 58. 37,00						38,54		11. 59. 36,09	T.
		(i) Polaris SP.....	....	45,5	20,0	....	1,0	....	....			13. 6. 10,10						32,18		13. 6. 29,80	T.
		β Aquilæ.....	....	37,5	50,9	4,3	18,4	31,7	45,2			19. 47. 4,57						6,09		19. 48. 4,27	T.
		(j) 1 L.....	23,3	38,2	53,2	8,2	23,7	38,7	53,7			19. 59. 8,43						10,11		20. 0. 8,17	T.
		(i) α <sup>2</sup> Capricorni....	11,7	25,3	38,9	52,7	6,9	20,7	34,3			20. 8. 52,93						54,47		20. 9. 52,93	T.
		(i) β Capricorni....	2,2	16,2	29,9	44,0	58,2	11,9	26,0			20. 11. 44,06						45,63		20. 12. 43,71	T.
Sept.23	(k) α Hydræ.....	....	....	3,6	17,0	31,0	44,3	58,0	9. 19. 17,20	-0,8		18,74	60,36	1,39		B.					
	(l) Regulus.....	46,1	59,9	13,2	27,0	41,1	54,8	8,8	9. 59. 27,27			28,77	60,53			B.					
Sept.24	(m) ⊙ 1 L.....	57,1	10,4	23,6	37,2	51,3	4,7	17,9	12. 3. 37,46				39,01		12. 4. 39,60	B.					
	⊙ 2 L.....	5,1	18,6	31,7	45,7	59,0	12,6	26,1	12. 5. 45,54				47,09		12. 6. 47,68	B.					
Sept.25	(n) B.A.C. 6671....	22,2	37,1	50,8	6,1	20,4	34,4	49,0	19. 21. 5,72	+2,1	-1,0	+1,1	6,29	62,41	19. 22. 8,68	S.					
	B.A.C. 6700....	6,2	20,1	34,4	49,1	4,0	18,1	32,3	19. 25. 49,18				49,75		19. 26. 52,15	S.					
	e <sup>1</sup> Sagittarii....	31,1	45,4	59,3	13,9	27,8	41,3	55,7	19. 31. 13,50				14,03		19. 32. 16,43	S.					
	β Aquilæ.....	20,7	34,2	47,7	1,4	15,1	28,3	42,0	19. 47. 1,34				1,86		19. 48. 4,27	B.					
	B.A.C. 6864....	51,1	5,6	20,4	35,1	50,0	4,2	18,7	19. 51. 35,02				35,59		19. 52. 38,01	S.					
	(n) 65 Sagittarii....	30,1	43,6	57,5	11,4	25,3	39,0	53,0	19. 56. 11,41				11,92		19. 57. 14,34	S.					
	B.A.C. 6923....	7,0	21,2	35,4	49,5	4,1	18,3	32,4	20. 0. 49,70				50,25		20. 1. 52,68	S.					
	α <sup>2</sup> Capricorni....	8,2	21,8	35,4	49,4	3,1	17,1	30,8	20. 8. 49,40				49,91		20. 9. 52,35	S.					
	21 Capricorni....	48,5	2,3	16,2	31,0	45,5	59,2	13,4	20. 51. 30,87				31,41		20. 52. 33,89	S.					
	(o) Fortuna.....	48,3	2,4	....	30,0	....	57,6	....	21. 56. 29,83				30,34		21. 57. 32,88	B.					
	Neptune.....	48,9	2,2	15,7	29,7	43,6	57,0	10,6	22. 44. 29,68				30,18		22. 45. 32,77	B.					
	α Andromedæ....	58,6	13,7	28,9	44,4	59,7	14,9	30,2	23. 59. 44,34				44,70		0. 0. 47,36	B.					

ILLUMINATION EAST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,336, -26°,893, -13°,655, -0°,008, +13°,635, +26°,906, +40°,351.

(a) 'A fainter south-following.' (b) Afterwards cloudy. (c) 'Satisfactory observation.' (d) 'The counting was 13<sup>a</sup> in advance.' Corrected accordingly. (e) Bad definition. (f) 'The north-preceding of two equal.' (g) 'A faint companion *nf*.' The last four wires have been decreased 20<sup>a</sup>. (h) 'Good, but at times unsteady.' (i) Cloudy. (k) Faint. (l) Great motion. (m) Between these observations the Transit was twice reversed. The observations marked S were taken by Mr G. Symonds, assistant to Mr Carrington. No corrections are applied for the difference of personal equation of B and S. See the Introduction. (n) Wire IV has been conjecturally increased 1<sup>a</sup>. (o) Very faint: moon-light strong.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Sept. 28	$\beta$ Lyrae.....	....	....	14,4	31,0	47,8	3,2	19,2	18.43.30,95	+1,7	-0,8	+1,1	31,26	66,70	1,29				S.
	(a) $\zeta$ Aquilæ.....	49,1	3,0	16,4	30,3	44,3	58,2	12,2	18.57.30,50				30,95	66,86					S.
	Regulus.....	40,2	53,7	7,3	21,1	35,4	49,1	3,0	9.59.21,40				21,85	67,54	1,35	10. 0. 29,37			S.
Sept. 29	(b) Polaris SP.....	19,7	....	....	29,8	....	49,0	....	13. 5. 27,42				26,54			13. 6. 34,24			B.
	(c) Polaris SP. M....	15,0	58,9	44,9	29,8	14,7	57,1	42,8	13. 5. 28,72				27,84			13. 6. 35,54			B.
	Arcturus.....	3,7	17,8	31,8	46,1	0,9	15,1	29,2	14. 7. 46,37				46,77	67,84		14. 8. 54,53			B.
	$\gamma$ Aquilæ.....	25,5	39,1	52,3	6,1	20,2	33,9	47,4	19.38. 6,36				6,83	68,12		19.39.14,89			B.
	$\alpha$ Aquilæ.....	46,1	59,6	12,9	26,9	40,8	54,0	47,4	19.42.26,82				27,31	67,99		19.43.35,38			S.
	$\beta$ Ceti.....	20,6	34,9	48,9	3,2	17,6	31,7	45,9	0.35. 3,26				3,78	68,27		0.36.12,12			B.
	(d) Polaris.....	15,0	59,6	32,7	23,5	12,0	....	....	1. 5. 22,91				23,90			1. 6. 32,27			B.
	(e) Polaris M.....	18,0	59,5	44,0	23,5	7,7	54,7	39,0	1. 5. 26,94				27,93			1. 6. 36,30			B.
	(f) $\delta$ L.....	17,1	31,1	44,7	58,7	12,6	26,1	40,0	1.44.58,62				59,12			1.46. 7,53			B.
	Regulus.....	39,0	52,4	6,2	20,1	34,3	47,4	1,5	9.59.20,12				20,57	68,84	1,47				S.
Sept. 30	$\odot$ 1 L.....	28,0	41,6	54,6	8,4	22,1	35,2	49,0	12.25. 8,42				8,92			12.26.18,02			B.
	$\odot$ 2 L.....	36,4	50,0	3,1	17,0	30,8	44,0	57,3	12.27.16,95				17,45			12.28.26,55			B.
	$\beta$ Aquarii.....	57,2	10,7	24,0	37,8	51,6	4,8	18,4	21.22.37,79				38,29	69,77					B.
	(g) Fortuna.....	10,4	....	37,2	....	5,4	....	32,1	21.54.51,28				51,81			21.56. 1,49			B.
Oct. 1	$\odot$ 1 L.....	3,6	17,0	30,4	44,1	58,0	11,1	24,8	12.28.44,14				44,64		1,44	12.29.55,24			B.
	$\odot$ 2 L.....	12,3	26,0	39,0	52,9	6,7	20,0	33,5	12.30.52,91				53,41			12.32. 4,01			B.
	(h) Polaris SP.....	20,5	2,0	34,5	25,0	14,5	....	28,0	13. 5. 24,70				23,82			13. 6. 34,46			S.
	$\zeta$ Aquilæ.....	45,0	58,8	12,5	26,1	....	54,2	8,0	18.57.26,44				26,89	70,86		18.58.37,88			S.
	(i) B.A.C. 6607.....	52,0	7,1	21,3	35,8	51,0	5,3	20,0	19.10.36,07				36,61			19.11.47,61			S.
	$\delta$ Aquilæ.....	12,0	25,1	38,4	51,9	6,0	19,1	32,6	19.16.52,15				52,65			19.18. 3,66			S.
	B.A.C. 6727.....	19,1	34,0	48,4	3,2	18,1	33,0	47,5	19.30. 3,32				3,88			19.31.14,90			S.
	$\gamma$ Aquilæ.....	22,2	36,0	....	3,3	17,0	30,5	....	19.38. 3,23				3,70	71,22		19.39.14,73			S.
	$\alpha$ Aquilæ.....	43,0	56,5	9,8	23,6	37,7	50,5	4,8	19.42.23,70				24,19	71,07		19.43.35,22			S.
	$\beta$ Aquilæ.....	12,2	25,6	39,0	52,4	6,4	....	33,2	19.46.52,64				53,14	71,04		19.48. 4,18			S.
	B.A.C. 6889.....	22,3	....	51,0	5,4	20,5	34,7	49,1	19.55. 5,67				6,20			19.56.17,25			S.
	$\alpha^s$ Capricorni....	59,5	13,1	26,8	40,8	54,8	8,3	22,1	20. 8. 40,77				41,26	70,98		20. 9. 52,32			B.
	10 Delphini.....	....	42,9	56,5	10,7	25,0	38,7	52,4	20.33.10,77				11,22			20.34.22,31			S.
	52 Cygni.....	37,0	52,4	7,8	23,4	39,4	54,7	10,1	20.38.23,54				23,87			20.39.34,96			S.
Oct. 2	(k) $\odot$ 1 L.....	....	53,1	6,2	20,1	34,1	47,0	....	12.32.20,10				20,59		1,37	12.33.32,59			B.
	$\odot$ 2 L.....	....	....	....	....	....	56,1	9,6	12.34.29,07				29,56			12.35.41,56			B.
	(l) $\alpha$ Arietis.....	56,1	10,7	25,1	40,0	54,6	9,2	23,7	1.57.39,91				40,29	72,76					B.
Oct. 5	(g) Neptune.....	....	56,1	....	23,2	37,1	50,6	4,1	22.43.23,31				23,79		1,43	22.44.40,43			B.
	$\alpha$ Pegasi.....	27,1	41,0	54,7	8,2	22,7	36,4	50,6	22.56. 8,68				9,12	76,73					B.
	$\alpha$ Andromedæ....	44,6	59,9	14,8	30,4	46,0	1,1	16,1	23.59.30,41				30,76	76,65					B.
Oct. 6	$\odot$ 1 L.....	8,4	21,9	35,2	49,0	2,7	16,2	29,8	12.46.49,03				49,53		1,43	12.48. 7,04			S.
	$\odot$ 2 L.....	....	30,5	43,9	57,8	11,5	24,8	38,7	12.48.57,76				58,26			12.50.15,78			S.
	(m) $\gamma$ Aquilæ.....	15,3	29,2	42,4	56,2	10,1	23,7	37,2	19.37.56,30				56,77	78,06		19.39.14,69			B.
	(m) $\alpha$ Aquilæ.....	35,8	49,6	3,0	16,7	30,6	44,2	57,7	19.42.16,80				17,29	77,89		19.43.35,22			B.
	$\beta$ Aquilæ.....	5,2	18,8	32,1	45,8	59,5	12,7	26,3	19.46.45,77				46,27	77,83		19.48. 4,20			B.
	26 Capricorni....	40,8	4,2	18,1	32,8	47,3	1,7	15,9	20.59.32,83				33,36			21. 0. 51,36			B.
	(n) H. C. 41200.....	0,2	14,2	27,8	42,2	56,2	9,9	24,0	21. 5. 42,07				42,57			21. 7. 0,58			B.
	B.A.C. 7392.....	2,6	17,2	31,2	45,6	0,3	14,8	29,1	21. 8. 45,83				46,36			21.10. 4,37			B.
	B. (w.) xx. 458..	57,0	10,8	24,2	38,1	52,3	6,0	20,1	21.18.38,36				38,85			21.19.56,87			B.
	$\beta$ Aquarii.....	49,0	2,4	15,7	29,4	43,2	56,3	10,2	21.22.29,46				20,96	78,03		21.23.47,98			B.
	(g) Neptune.....	36,2	49,8	3,2	17,1	30,7	44,2	57,3	22.43.16,93				17,41			22.44.35,52			B.
Oct. 7	$\odot$ 1 L.....	....	....	12,9	26,4	40,2	53,8	7,3	12.50.26,57			-1,0	27,06		1,51	12.51.45,94			B.
	$\odot$ 2 L.....	55,1	8,8	22,1	36,6	49,6	3,1	16,6	12.52.35,90				36,39			12.53.55,27			B.
	B. (w.) xx. 612..	36,1	50,0	3,3	17,3	31,6	45,3	59,3	20.23.17,56				18,05			20.24.37,40			B.
	$\alpha$ Aquarii.....	12,7	26,2	39,4	53,2	6,8	19,8	33,4	21.56.53,07				53,57	79,46		21.58.13,02			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40",336, -26",893, -13",655, -0",008, +13",635, +26",906, +40",351.

(a) Disturbance by noise of shutters: the last four wires have been increased 1".  
 cloud at the last two wires. (e) Blazing or clouded. (f) Clouded but steady.  
 has been increased 1" conjecturally. (k) Cloud, and extraordinary motion.  
 (n) 'A star of Mag. 6 south-following.'

(b) Interruption by clouds. (c) Pretty steady.  
 (g) Very faint from cloud. (h) Great motion.  
 (l) Faint: the sky covered by thick cloud.

(d) Hid by  
 (i) Wire IV  
 (m) Blazing.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.											
Oct. 7	Neptune.....	30,1	43,8	56,9	10,8	24,6	38,1	51,6	22.43.10,84	+1,7	-1,0	+1,1	11,32		1,51	22.44.30,82			B.
	a Pegasi.....	24,2	38,1	51,7	5,8	20,0	33,4	47,7	22.56.5,84				6,27	79,57		22.57.25,78			B.
	a Andromedæ...	41,8	57,0	12,2	27,5	43,0	58,2	13,4	23.59.27,59				27,92	79,49		0.0.47,50			B.
Oct. 8	(a) β Aquilæ.....	2,1	15,6	28,9	42,7	56,2	9,7	23,0	19.46.42,60				43,09	80,97	1,67				B.
Oct. 9	⊙ 2 L.....	12,8	26,1	39,6	53,2	7,1	20,0	34,1	12.59.53,27				53,75			13.1.15,85			B.
Oct. 11	(b) ⊙ 1 L.....	22,0	35,8	49,0	3,0	16,8	30,0	43,3	13.5.2,84			-0,4	3,24		1,45	13.6.28,78			B.
	⊙ 2 L.....	31,8	45,6	59,0	12,7	26,3	40,1	53,6	13.7.12,73				13,13			13.8.38,67			B.
	a Aquarii.....	6,2	19,6	33,0	46,4	0,0	13,2	26,9	21.56.46,47				46,89	86,10		21.58.12,97			B.
	B. (w.) xxii. 694	28,1	41,7	55,1	8,8	22,4	35,9	49,3	22.31.8,76				9,16			22.32.35,27			B.
	(c) B. (w.) xxii. 776	24,1	38,3	51,2	5,2	19,1	32,4	46,2	22.35.5,21				5,60			22.36.31,71			B.
	(d) B. (w.) xxii. 852	14,1	27,5	40,9	54,9	8,7	22,1	35,9	22.38.54,87				55,26			22.40.21,38			B.
	Neptune.....	5,3	18,8	32,1	46,0	0,0	13,4	27,0	22.42.46,09				46,48			22.44.12,60			B.
	(e) B. (w.) xxii. 1036	42,7	56,1	9,2	23,2	37,0	50,1	3,6	22.48.23,13				23,53			22.49.49,66			B.
	B. (w.) xxii. 1109	53,5	7,1	20,1	34,0	47,8	1,0	14,6	22.51.34,01				34,41			22.53.0,54			B.
	a Pegasi.....	17,8	31,8	45,3	59,4	13,3	27,2	41,0	22.55.59,40				59,77	86,04		22.57.25,91			B.
	(f) Massilia.....	....	....	2,1	16,1	....	42,9	56,2	23.51.15,91				16,33			23.52.42,52			B.
	(g) a Andromedæ...	....	....	....	20,0	37,2	51,6	6,4	23.59.20,84				21,13	86,27		0.0.47,33			B.
Oct. 12	⊙ 1 L.....	2,2	15,8	29,0	42,9	57,0	10,3	23,9	13.8.43,01				43,41		1,40	13.10.10,36			B.
	⊙ 2 L.....	12,2	26,0	39,0	53,0	6,7	20,2	34,1	13.10.53,03				53,43			13.12.20,38			B.
	γ Aquilæ.....	5,9	19,6	33,0	47,1	0,7	14,2	28,0	19.37.46,93				47,33	87,39		19.39.14,66			B.
	a Aquilæ.....	26,7	40,2	53,3	7,2	21,2	34,7	48,0	19.42.7,33				7,74	87,33		19.43.35,07			B.
	β Aquilæ.....	55,9	9,2	22,7	36,3	50,2	3,2	16,8	19.46.36,33				36,75	87,24		19.48.4,09			B.
	α Capricorni....	....	56,8	10,2	24,2	38,3	52,0	....	20.8.24,30				24,69	87,37		20.9.52,05			B.
	β Aquarii.....	39,6	53,1	6,3	20,2	33,9	47,2	0,7	21.22.20,14				20,55	87,36		21.23.47,98			B.
	(h) B. (w.) xxi. 940.	46,1	59,9	13,0	26,9	40,9	54,1	7,8	21.37.26,96				27,35			21.38.54,79			B.
	(i) B. (w.) xxi. 1025	....	19,1	32,5	46,2	0,0	13,7	....	21.41.46,30				46,69			21.43.14,13			B.
	(k) B. (w.) xxi. 1137	25,0	38,7	52,0	6,0	20,0	33,2	47,0	21.47.5,99				6,38			21.48.33,83			B.
	(l) H. C. 42841.....	7,9	21,6	35,2	49,7	3,3	17,7	31,8	21.49.49,68				50,08			21.51.17,53			B.
	(m) Fortuna.....	29,1	42,7	....	10,1	23,9	38,2	51,7	21.54.10,30				10,69			21.55.38,15			B.
	B. (w.) xxii. 1036	41,1	54,6	7,8	21,6	35,0	48,3	2,0	22.48.21,48				21,88			22.49.49,39			B.
	B. (w.) xxii. 1109	52,1	5,6	18,7	32,6	46,0	59,4	13,0	22.51.32,48				32,89			22.53.0,41			B.
	a Pegasi.....	16,0	30,2	43,8	57,9	12,2	25,4	39,5	22.55.57,86				58,23	87,57		22.57.25,75			B.
	Massilia.....	48,2	1,6	15,0	28,6	42,3	56,2	9,2	23.50.28,73				29,15			23.51.56,72			B.
	a Andromedæ...	....	49,1	4,2	19,6	35,1	50,0	....	23.59.19,60				19,89	87,51		0.0.47,47			B.
	β Ceti.....	1,4	15,6	....	44,0	58,2	12,3	26,4	0.34.43,92				44,34	87,77		0.36.11,96			B.
Oct. 13	(n) ⊙ 1 L.....	43,0	56,7	9,7	23,3	37,6	50,9	4,3	13.12.23,64				24,04			13.13.52,39			B.
	⊙ 2 L.....	52,9	6,2	19,8	33,6	47,2	1,0	14,3	13.14.33,57				33,97			13.16.2,32			B.
Oct. 17	(o) Polaris SP.....	....	....	....	57,0	50,5	....	15,0	13.4.60,93	+1,8	-1,1		57,95		1,73				B.
Oct. 18	(p) ⊙ 2 L.....	25,1	38,8	52,1	6,2	20,1	33,6	....	13.33.6,16				6,55			13.34.43,15			B.
	Arcturus.....	....	....	....	17,5	32,0	46,1	0,6	14.7.17,54				17,88	96,69		14.8.54,52			B.
	(q) ⊙ 1 L.....	49,0	4,3	19,6	34,7	50,1	5,3	20,6	18.38.34,71				35,16			18.40.12,12			B.
	π Sagittarii.....	38,0	52,5	6,7	21,2	35,9	50,1	4,6	18.59.21,28				21,71			19.0.58,70			B.
	(r) β Aquilæ.....	45,7	59,0	12,2	26,1	39,9	53,2	6,8	19.46.26,13				26,55	97,34		19.48.3,59			B.
	(r) β Aquarii.....	29,7	43,1	56,2	10,0	23,7	37,0	50,4	21.22.10,01				10,42	97,42		21.23.47,58			B.
	(s) B. (w.) xxi. 1038	32,3	46,3	59,9	14,0	28,1	41,3	55,8	21.42.13,96				14,36			21.43.51,54			B.
	(t) B. (w.) xxi. 1137	15,1	28,8	42,0	55,9	9,6	23,2	36,9	21.46.55,93				56,32			21.48.33,51			B.
	B. (w.) xxi. 1249	8,2	22,0	35,8	50,2	4,2	17,9	31,8	21.51.50,01				50,41			21.53.27,60			B.
	Fortuna.....	....	....	....	33,0	....	1,2	15,1	21.55.33,60				33,99			21.57.11,19			B.
	H. C. 34611.....	46,3	0,2	13,6	27,3	41,3	54,9	8,2	22.12.27,40				27,79			22.14.5,01			B.
	(u) B. (w.) xxii. 343.	22,0	35,1	48,4	2,3	16,8	30,1	44,2	22.15.2,70				3,10			22.16.40,32			B.
	B. (w.) xxii. 417.	21,7	35,1	48,2	2,2	16,0	29,1	43,1	22.18.2,20				2,60			22.19.39,83			B.
	H. C. 43946.....	44,1	58,0	11,7	26,0	40,2	54,0	8,0	22.21.26,00				26,40			22.23.3,63			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.336, -26<sup>s</sup>.893, -13<sup>s</sup>.655, -0<sup>s</sup>.008, +13<sup>s</sup>.635, +26<sup>s</sup>.906, +40<sup>s</sup>.351.

(a) The night was cloudy. (b) Very tremulous. (c) 'The southern of two.' (d) 'Another preceding.' (e) 'One south-following about 10<sup>s</sup>.'  
 (f) Faint and observed doubtfully, a cloud passing. (g) Obscured by cloud: the observation mere guess. (h) 'One north-following.' (i) 'One south of the same R.A., and another preceding considerably north.' (j) 'One north-following.' (k) 'One north-following.' (l) Disturbance. (m) 'Two south-following.' (n) The day overcast. (o) Dense cumuli passing. (p) Very cloudy: 1 L hid. (q) Great motion. (r) These give discordant clock-errors. See also Oct. 20. (s) Very faint. (t) 'One of Mag. 9 north-following by 7<sup>s</sup>.' (u) 'Three close together.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Oct. 18	B. (w.) xxii. 547	56,1	10,0	23,2	37,3	51,3	5,0	19,1	22.24.37,43	+1,8	-1,1	-0,4	37,83		1,73	22.26.15,06			B.
	B. (w.) xxii. 617	58,0	11,8	25,3	39,2	53,3	7,0	20,7	22.27.39,33				39,73			22.29.16,97			B.
	B. (w.) xxii. 694	16,7	30,1	43,3	57,2	11,1	24,3	38,0	22.30.57,25				57,65			22.32.34,89			B.
	B.A.C. 7920. ....	12,2	26,2	39,4	53,2	7,0	20,4	34,0	22.33.53,20				53,60			22.35.30,85			B.
	(a) Neptune.....	25,2	38,8	52,1	5,9	19,8	33,1	46,7	22.42.5,94				6,33			22.43.43,59			B.
	Massilia.....	29,1	42,6	55,8	9,4	23,2	36,8	49,2	23.46.9,45				9,87			23.47.47,21			B.
	α Andromedæ...	24,2	39,1	54,1	9,5	25,2	40,1	55,5	23.59.9,68				9,97	97,42		0.0.47,32			B.
Oct. 19	☉ 1 L. ....	58,1	11,9	25,3	39,0	53,0	6,8	20,2	13.34.39,19				39,58		1,64	13.36.18,12			B.
	☉ 2 L. ....	9,2	23,1	36,3	50,2	4,2	18,0	31,5	13.36.50,35				50,74			13.38.29,28			B.
	α Ophiuchi.....	43,9	57,8	11,2	25,2	39,1	52,9	6,7	17.26.25,26				25,64	98,80		17.28.4,44			B.
	(b)(c) γ Aquilæ.....	54,1	7,9	21,3	35,3	....	2,3	17,1	19.37.35,31				35,71	98,90		19.39.14,66			B.
	(b) δ 1 L. ....	53,3	8,5	23,3	38,9	54,1	9,1	24,3	19.39.38,79				39,24			19.41.18,20			B.
	β Aquilæ.....	44,0	57,5	10,7	24,5	38,2	51,7	5,1	19.46.24,53				24,95	98,93		19.48.3,91			B.
	α <sup>2</sup> Capricorni....	31,0	45,1	58,3	12,4	26,6	40,1	53,9	20.8.12,48				12,88	99,07		20.9.51,87			B.
	β Capricorni....	22,0	35,9	49,5	3,6	17,8	31,7	45,4	20.11.3,70				4,10			20.12.43,09			B.
	γ Capricorni....	17,0	31,0	45,1	59,5	14,0	28,0	42,0	20.29.59,52				59,93			20.31.38,94			B.
	Fortuna.....	12,7	25,1	....	53,1	7,8	21,3	34,3	21.55.53,40				53,79			21.57.32,90			B.
	(d) B. (w.) xxii. 694	15,1	28,4	....	54,9	8,8	22,6	36,2	22.30.55,37				55,77			22.32.34,92			B.
	(e) B. (w.) xxii. 748	....	5,2	18,2	32,6	46,7	0,2	....	22.33.32,58				32,98			22.35.12,13			B.
	B. (w.) xxii. 822	49,2	3,0	16,2	30,0	43,7	57,1	10,3	22.37.29,92				30,32			22.39.9,48			B.
	(f) Neptune.....	19,8	33,2	46,8	0,6	14,3	27,8	41,3	22.42.0,54				0,93			22.43.40,10			B.
	B. (w.) xxii. 1007	0,2	14,1	27,8	41,4	55,3	9,2	22,7	22.46.41,53				41,92			22.48.21,09			B.
	(g) B. (w.) xxii. 1068	....	12,0	25,2	39,1	53,0	6,6	....	22.49.39,18				39,57			22.51.18,74			B.
	α Pegasi.....	4,6	18,3	32,0	46,1	0,2	14,0	28,0	22.55.46,17				46,54	99,21		22.57.25,72			B.
	B. (w.) xxiii. 38.	53,3	11,9	24,9	38,2	52,2	5,4	19,2	23.1.38,59				39,01			23.3.18,50			B.
	α Andromedæ...	22,2	37,2	52,2	7,9	23,4	38,4	53,9	23.59.7,89				8,18	99,20		0.0.47,43			B.
	(h) Polaris SP. ....	....	....	....	56,5	45,5	18,5	5,0	13.4.55,01				52,03		1,54				B.
Oct. 20	(i) ☉ 1 L. ....	42,8	56,4	9,7	23,8	37,8	51,2	5,0	13.38.23,81				24,20			13.40.4,17			B.
	☉ 2 L. ....	54,0	7,4	21,2	35,0	49,2	2,6	16,2	13.40.35,09				35,48			13.42.15,45			B.
	Arcturus.....	31,5	45,8	59,8	14,3	28,8	42,9	57,3	14.7.14,34				14,68	99,90		14.8.54,68			B.
	(k) α Aquilæ.....	13,2	26,7	40,0	53,8	7,7	21,0	34,7	19.41.53,87				54,28	100,66		19.43.34,64			B.
	(k) β Aquilæ.....	42,1	55,8	9,1	22,8	36,6	49,7	3,3	19.46.22,77				23,19	100,67		19.48.3,55			B.
	γ Capricorni....	15,3	29,6	43,5	57,8	12,3	26,4	40,3	20.29.57,89				58,30			20.31.38,71			B.
	δ 1 L. ....	54,9	9,7	24,2	39,4	54,9	9,6	24,3	20.37.39,57				40,01			20.39.20,43			B.
	H. C. 40386.....	58,0	12,0	26,1	40,5	55,1	9,1	23,5	20.45.40,61				41,04			20.47.21,47			B.
	B. (w.) xx. 1305.	36,1	49,7	3,2	17,1	31,6	44,8	58,2	20.49.17,24				17,64			20.50.58,04			B.
	H. C. 40684.....	....	12,1	26,3	41,0	55,5	9,6	....	20.52.40,90				41,33			20.54.21,76			B.
	η Capricorni....	36,3	50,8	4,7	19,3	33,9	48,2	2,6	20.54.19,40				19,83			20.56.0,26			B.
	α Andromedæ...	20,6	35,9	50,9	6,2	21,8	36,8	52,3	23.59.6,36				6,65	100,73		0.0.47,28			B.
Oct. 23	☉ 1 L. ....	59,0	12,8	26,1	40,2	54,1	7,9	21,6	13.50.40,24				40,63		1,46	13.51.27,34			B.
	☉ 2 L. ....	11,0	24,4	38,0	52,1	6,1	19,7	33,5	13.52.52,11				52,50			13.53.39,21			B.
	(l) β Aquarii.....	19,6	33,2	46,6	0,2	13,8	27,2	40,9	21.23.0,21				0,62	47,15		21.23.47,79			B.
	Neptune.....	57,9	11,4	25,0	38,6	52,3	5,8	19,6	22.42.38,66				39,05			22.43.26,30			B.
	α Pegasi.....	56,3	10,3	24,0	38,1	52,2	5,8	19,8	22.56.38,07				38,44	47,27		22.57.25,71			B.
	φ Aquarii.....	13,2	26,8	40,2	54,0	7,7	21,2	34,7	23.5.53,97				54,37			23.6.41,64			B.
	ψ <sup>a</sup> Aquarii.....	49,1	3,0	16,2	30,1	44,0	57,8	11,2	23.10.30,20				30,59			23.11.17,87			B.
	δ 1 L. ....	43,1	57,3	10,9	25,2	39,5	53,3	7,3	23.12.25,23				25,62			23.13.12,90			B.
	(m) β Ceti.....	....	....	9,7	24,2	38,7	52,7	7,1	0.35.24,28				24,71	47,40		0.36.12,08			B.
Oct. 30	(n) ☉ 2 L. ....	0,1	14,0	27,7	41,6	55,7	9,4	23,3	14.19.41,68		+0,1	+1,9	42,26		1,47	14.20.38,88			B.
	(o) δ Ophiuchi.....	58,1	11,7	24,9	....	52,2	5,7	18,9	16.5.38,58				39,17	56,73					B.
Nov. 2	(p) Polaris.....	....	58,5	34,3	24,8	....	59,7	....	1.5.26,96				28,85		1,33	1.6.30,63			B.
	α Arietis.....	7,3	21,8	36,2	50,7	5,7	20,2	34,7	1.57.50,94				51,41	61,97		1.58.53,24			B.
	α Ceti.....	52,9	6,2	19,3	33,2	47,1	0,2	13,7	2.53.33,23				33,82	61,82		2.54.35,70			B.
	Aldebaran.....	44,3	58,3	12,3	26,4	40,7	54,5	8,6	4.26.26,44				26,96	61,88		4.27.28,93			B.
	(q) Hygeia.....	15,0	30,3	44,7	0,3	15,4	30,0	44,1	4.42.59,97				60,42			4.44.2,40			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.336, -26<sup>s</sup>.893, -13<sup>s</sup>.655, -0<sup>s</sup>.008, +13<sup>s</sup>.635, +26<sup>s</sup>.906, +40<sup>s</sup>.351.

Oct. 22, 2<sup>h</sup>, Hardy was put forward 1<sup>m</sup>. Some seconds were lost in attempting to adjust the minute hand by turning it back.

(a) 'A star of Mag. 8½ south-preceding.' (b) Disturbance. (c) 'The counting 1<sup>s</sup> slow on looking at the clock.' No correction has been applied.  
 (d) Thick sky. (e) 'The north-following star.' The other star is B. (w.) xxii. 747. (f) Faint. (g) 'No following star of the same N.P.D.'  
 (h) Tremor. (i) Excessive motion. (k) These give discordant clock-errors: cause unknown. (l) Faint: the sky overcast. (m) The noted times have been decreased 9<sup>s</sup>. (n) Very steady: light clouds passing. (o) Very tremulous and faint, sometimes disappearing. (p) Clouds: wire VI doub. ful. (q) 'Good.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Nov. 2	(a) Polaris SP.....	19,5	6,2	41,5	32,8	23,4	57,0	43,0	13. 5. 31,91	+1,8	+0,1	+1,9	30,29		1,45	13. 6. 32,62	B.		
Nov. 3	Polaris M. ....	15,3	58,5	42,5	26,0	12,0	56,0	40,0	1. 5. 27,50				29,39			1. 6. 32,45	B.		
	α Arietis.....	6,2	20,5	34,8	49,8	4,6	18,8	33,6	1. 57. 49,76				50,23	63,15			B.		
	Aldebaran.....	43,1	57,2	10,8	25,1	39,3	53,2	7,3	4. 26. 25,14				25,66	63,20			B.		
	Hygeia.....	38,1	53,3	7,2	23,0	38,0	....	....	4. 42. 22,86				23,31			4. 43. 26,58	B.		
	* N.P.D. 64°. 9'.	25,2	40,2	54,8	10,0	25,2	39,9	54,8	4. 48. 10,01				10,46			4. 49. 13,74	B.		
	* N.P.D. 63°. 59'	....	....	14,7	29,7	45,0	0,2	14,8	4. 49. 29,92				30,37			4. 50. 33,65	B.		
	Polaris SP. M...	14,8	58,0	43,0	27,0	12,6	59,0	40,2	13. 5. 27,49		-0,3		26,67		1,65	13. 6. 30,40	B.		
	Polaris SP. ....	....	....	....	27,0	19,0	54,0	....	13. 5. 27,56				26,74			13. 6. 30,47	B.		
	Arcturus.....	7,3	21,4	35,7	50,1	4,7	18,8	33,1	14. 7. 50,15				50,62	64,06		14. 8. 54,42	B.		
Nov. 4	⊙ 1 L. ....	18,2	32,0	45,7	0,0	14,0	27,8	41,9	14. 36. 59,94				60,51			14. 38. 4,35	B.		
	⊙ 2 L. ....	33,0	46,3	0,1	14,4	28,6	42,5	56,6	14. 39. 14,50				15,07			14. 40. 18,91	B.		
	(b) β Aquarii.....	2,0	15,6	28,7	42,6	56,2	9,6	23,2	21. 22. 42,55				43,12	64,48		21. 23. 47,42	B.		
	α Aquarii.....	27,5	40,9	54,1	7,8	21,3	34,4	48,0	21. 57. 7,72				8,30	64,39		21. 58. 12,64	B.		
	Neptune.....	9,0	22,4	35,7	49,9	3,6	17,1	30,8	22. 41. 49,79				50,35			22. 42. 54,74	B.		
	(c) B. (w.) xxiii. 770	58,2	11,7	25,2	38,3	....	6,3	20,0	23. 36. 38,89				39,46			23. 37. 43,91	B.		
Nov. 5	Polaris SP. M...	44,5	30,8	13,8	56,3	45,0	28,5	12,0	13. 4. 59,01	-2,2	-3,1	+6,9	82,66		1,57		B.		
	(d) Polaris P.....	....	....	8,0	56,3	50,5	....	....	13. 4. 58,63				82,28				B.		
Nov. 6	⊙ 1 L. ....	12,3	26,8	40,2	54,6	8,9	22,7	36,7	14. 44. 54,60				55,06			14. 46. 2,00	B.		
	⊙ 2 L. ....	27,6	41,6	55,5	9,8	24,0	37,6	51,9	14. 47. 9,72				10,18			14. 48. 17,12	B.		
Nov. 8	(f) ⊙ 1 L. ....	10,0	....	38,1	....	6,7	20,6	....	14. 52. 52,37		-3,7		52,82		1,56	14. 54. 2,79	B.		
	⊙ 2 L. ....	25,8	39,7	....	....	....	49,6	....	14. 55. 7,77				8,22			14. 56. 18,19	B.		
	(g)(h) α Aquarii.....	21,8	35,0	48,2	2,0	15,6	28,8	42,3	21. 57. 1,95				2,20	70,43			B.		
Nov. 10	⊙ 1 L. ....	11,3	25,3	39,3	53,9	8,3	21,9	35,9	15. 0. 53,70				54,15		1,58	15. 2. 7,17	B.		
	⊙ 2 L. ....	27,3	41,4	55,2	9,9	24,1	38,0	52,1	15. 3. 9,72				10,17			15. 4. 23,19	B.		
	(h) α Aquilæ.....	40,0	53,9	7,3	21,0	34,9	48,3	1,8	19. 42. 21,03				21,14	73,48			B.		
Nov. 15	⊙ 1 L.....	29,2	43,4	57,6	12,0	26,4	40,2	54,4	15. 21. 11,88	-3,0	+5,8		12,28		1,31	15. 22. 33,16	B.		
	⊙ 2 L.....	46,2	0,6	14,4	29,1	43,6	57,3	11,9	15. 23. 29,02				29,42			15. 24. 50,30	B.		
	(k) α Coronæ.....	....	....	....	....	19,9	34,3	49,6	15. 27. 4,28				4,28	80,89			B.		
	α Serpentis.....	57,3	11,0	24,2	38,1	51,7	5,1	18,8	15. 35. 38,03				38,13	80,89			B.		
	(l) 1 L.....	27,0	42,1	57,2	13,0	28,3	43,3	58,8	19. 14. 12,81				13,25			19. 15. 34,34	B.		
Nov. 16	(m) ⊙ 1 L.....	35,5	49,8	4,0	18,3	32,9	....	....	15. 25. 18,35				18,75		1,44	15. 26. 40,82	B.		
	Neptune.....	37,1	50,7	4,2	18,2	31,8	45,2	58,8	22. 41. 18,00				18,31			22. 42. 40,81	B.		
	α Pegasi.....	21,1	35,2	48,7	3,0	17,2	30,6	44,6	22. 56. 2,91				2,96	82,48			B.		
	(d) Aldebaran.....	24,2	38,2	52,0	6,2	20,4	34,2	48,1	4. 26. 6,19				6,23	82,87			B.		
	Polaris SP.....	....	....	50,0	38,8	31,0	....	54,5	13. 4. 40,61				62,25		1,53		B.		
Nov. 17	(n) ⊙ 1 L.....	42,5	56,8	10,8	25,3	39,9	53,8	8,1	15. 29. 25,31				25,71			15. 30. 49,36	B.		
	⊙ 2 L.....	0,0	14,3	28,3	43,0	57,4	11,4	25,8	15. 31. 42,88				43,28			15. 33. 6,93	B.		
	1 L.....	24,6	39,2	53,9	9,0	24,0	38,3	53,2	21. 13. 8,89				9,30			21. 14. 33,31	B.		
	μ Capricorni.....	9,1	23,0	36,7	50,7	4,9	18,3	32,2	21. 43. 50,70				51,07			21. 45. 15,11	B.		
	Neptune.....	35,2	48,8	2,0	15,8	29,8	43,1	56,4	22. 41. 15,87				16,18			22. 42. 40,29	B.		
	(o) α Arietis.....	45,2	59,9	14,2	29,0	44,0	58,2	12,8	1. 57. 29,05				29,10	84,32		1. 58. 53,42	B.		
	(p) α Ceti.....	31,0	44,3	57,6	11,2	25,0	38,2	51,8	2. 53. 11,30				11,45	84,31		2. 54. 35,82	B.		
	Aldebaran.....	22,7	36,4	50,3	4,7	18,8	32,6	46,6	4. 26. 4,59				4,63	84,48		4. 27. 29,10	B.		
	(q) Hygeia.....	....	....	36,0	51,1	7,8	22,3	37,5	4. 31. 52,05				52,08			4. 33. 16,56	B.		
	* N.P.D. 64°. 9'.	4,7	19,3	34,2	49,3	4,6	19,3	....	4. 47. 49,37				49,39			4. 49. 13,89	B.		
	* N.P.D. 63°. 59'	....	....	54,0	9,2	24,4	39,2	54,1	4. 49. 9,21				9,23			4. 50. 33,73	B.		
	Rigel.....	22,7	36,4	49,8	3,6	17,3	30,9	44,4	5. 6. 3,58				3,88	84,50		5. 7. 28,40	B.		
	β Tauri.....	49,2	4,6	19,7	35,2	50,8	5,8	21,0	5. 15. 35,19				35,17	84,59		5. 16. 59,70	B.		

ILLUMINATION EAST. From Nov. 5, WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,336, -26°,893, -13°,655, -0°,008, +13°,635, +26°,906, +40°,351. From Nov. 5, -40°,351, -26°,906, -13°,635, +0°,008, +13°,655, +26°,893, +40°,336.

(a) 'Beautifully steady.' (b) Faint. (c) Too faint for satisfactory observation: the evening had become cloudy. (d) Cloudy. (e) Afterwards cloudy and no clock-stars could be observed. (f) Without the dark glass. (g) The wind boisterous and the clock's beat indistinct. (h) Faint from cloud. (i) Very steady. (k) Very faint: could not be seen sooner. (l) Faint from cloud. The evening was overcast. (m) No definite boundary and extremely faint. The observation was considered worthless. (n) Wind loud and clock's beat indistinct. 'Counting for 1 L 10° fast.' Correction applied. (o) Clouds had interrupted the observations. (p) Scarcely seen through cloud. (q) Very faint from cloud. The intervals are very irregular: apparently a second was gained after wire IV.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Nov. 18	(a) ☉ 1 L. ....	....	....	18,7	33,3	47,7	1,8	16,0	15. 33. 33,20	-2,2	-3,0	+5,8	33,60		1,62	15. 34. 58,68			B.
	☉ 2 L. ....	8,0	22,2	36,3	50,9	5,4	19,6	33,9	15. 35. 50,90				51,30			15. 37. 16,38			B.
	(b) δ Ophiuchi. ....	....	....	....	10,8	24,2	37,6	51,0	16. 5. 10,64				10,89	85,05		16. 6. 36,01			B.
	α Pegasi. ....	18,2	32,1	45,7	59,9	13,7	27,6	41,4	22. 55. 59,80				59,85	85,56		22. 57. 25,43			B.
	α Ceti. ....	29,3	42,9	55,8	9,8	23,3	36,7	50,2	2. 53. 9,72				9,87	85,90		2. 54. 35,72			B.
	Aldebaran. ....	21,2	35,1	48,8	3,2	17,4	31,2	45,0	4. 26. 3,13				3,17	85,96		4. 27. 29,12			B.
	Hygeia. ....	18,0	32,1	47,1	2,6	17,5	32,1	46,6	4. 31. 2,28				2,31			4. 32. 28,27			B.
	(c) H. C. 8927. ....	11,2	25,7	39,6	54,0	8,6	22,2	36,7	4. 35. 54,00				54,05			4. 37. 20,01			B.
	* N.P.D. 64°. 9'. ....	3,1	18,2	32,8	48,1	3,1	....	....	4. 47. 48,00				48,02			4. 49. 13,99			B.
	* N.P.D. 63°. 59'. ....	23,0	37,8	52,6	8,0	23,1	37,8	52,7	4. 49. 7,86				7,88			4. 50. 33,86			B.
Nov. 19	☉ 1 L. ....	58,7	13,0	27,1	41,8	56,2	10,2	24,8	15. 37. 41,68				42,09		1,73	15. 39. 8,88			B.
	☉ 2 L. ....	16,7	31,2	45,2	0,0	14,2	28,2	42,9	15. 39. 59,77				60,18			15. 41. 26,97			B.
	(d) α Ophiuchi. ....	....	9,6	23,2	37,2	51,3	4,9	18,7	17. 26. 37,26				37,31	86,88		17. 28. 4,23			B.
	Aldebaran. ....	19,3	33,3	47,2	1,3	15,8	29,4	43,3	4. 26. 1,37				1,41	87,73		4. 27. 29,12			B.
	(e) Hygeia. ....	26,6	41,0	56,1	11,2	26,4	40,9	55,8	4. 30. 11,14				11,17			4. 31. 38,89			B.
	Rigel. ....	19,6	33,0	46,4	0,4	14,2	27,6	41,2	5. 6. 0,34				0,64	87,77		5. 7. 28,40			B.
	(e) Calliope. ....	51,1	5,9	20,7	35,6	50,7	4,4	18,9	5. 9. 35,33				35,37			5. 11. 3,13			B.
	β Tauri. ....	46,2	1,3	16,5	32,3	47,7	2,7	17,8	5. 15. 32,07				32,05	87,76		5. 16. 59,82			B.
	ψ <sup>3</sup> Aquarii. ....	7,4	21,1	34,5	48,4	2,3	15,7	29,6	23. 9. 48,43				48,75			23. 11. 17,81			B.
	(f) 1 L. ....	25,8	39,8	53,2	....	....	35,1	....	23. 43. 7,44				7,74			23. 44. 36,84			B.
Nov. 25	☉ 1 L. ....	6,2	20,4	34,7	49,2	4,1	18,2	32,7	16. 2. 49,36				49,72		1,66	16. 4. 26,48			T.
	☉ 2 L. ....	25,6	39,7	54,0	8,7	23,7	37,6	51,7	16. 5. 8,72				9,08			16. 6. 45,85			T.
Nov. 26	γ Tauri. ....	....	19,0	32,6	46,7	0,8	14,7	28,6	4. 9. 46,76				46,71			4. 11. 25,97			T.
	δ <sup>2</sup> Tauri. ....	16,2	30,2	43,9	58,2	12,7	26,3	40,4	4. 13. 58,28				58,23			4. 15. 37,49			T.
	η 2 L. ....	18,9	33,7	47,9	2,8	17,6	31,7	46,5	4. 23. 2,73				2,68			4. 24. 41,95			T.
	Aldebaran. ....	8,2	22,2	35,7	50,1	4,3	18,1	32,1	4. 25. 50,10				50,05	99,20		4. 27. 29,33			T.
	τ Tauri. ....	2,6	17,1	31,3	46,3	1,0	15,4	29,9	4. 31. 46,23				46,17			4. 33. 25,45			T.
	ι Tauri. ....	56,2	10,7	24,7	39,3	54,0	8,2	22,7	4. 52. 39,40				39,35			4. 54. 18,66			T.
	(g) Rigel. ....	....	....	....	....	2,8	16,2	29,7	5. 5. 48,98				49,22	99,31		5. 7. 28,54			T.
	β Tauri. ....	34,7	50,1	5,2	20,7	36,1	51,2	6,6	5. 15. 20,65				20,52	99,44		5. 16. 59,86			T.
	α Orionis. ....	52,6	6,2	19,4	33,3	47,1	0,7	13,9	5. 45. 33,31				33,32	99,34		5. 47. 12,69			T.
	α Coronæ. ....	59,7	15,1	30,1	45,6	0,8	15,7	30,7	15. 26. 45,39				45,28	100,00	1,67	15. 28. 25,30			T.
	α Serpentis. ....	38,7	52,0	5,5	19,1	32,7	46,2	59,8	15. 35. 19,15				19,16	99,98		15. 36. 59,20			T.
	☉ 1 L. ....	34,2	48,5	3,2	17,7	32,2	46,8	1,2	16. 11. 17,69				18,06			16. 12. 58,14			T.
	☉ 2 L. ....	54,2	8,7	23,0	37,6	52,3	6,5	21,0	16. 13. 37,62				37,99			16. 15. 18,07			T.
	α Ophiuchi. ....	42,7	56,7	10,2	24,1	38,1	51,7	5,4	17. 26. 24,13				24,09	100,09		17. 28. 4,25			T.
	γ Aquilæ. ....	52,7	16,2	19,7	33,7	47,7	1,2	14,7	19. 37. 33,70				33,67	100,40		19. 39. 13,99			T.
	α Aquilæ. ....	13,2	26,7	40,2	54,2	8,0	21,2	34,7	19. 41. 54,03				54,03	100,40		19. 43. 34,35			T.
Nov. 27	Neptune. ....	22,2	36,0	49,4	3,1	17,0	30,7	44,1	22. 41. 3,21				3,45			22. 42. 43,98			T.
	α Pegasi. ....	....	16,7	30,7	44,7	58,8	12,7	....	22. 55. 44,72				44,68	100,62		22. 57. 25,23			T.
	(h) B. (w.) xxiii. 158	38,3	51,8	5,1	18,7	32,3	45,2	58,9	23. 7. 18,62				18,77			23. 8. 59,33			T.
	B. (w.) xxiii. 239	37,7	51,5	4,7	18,7	32,6	45,9	59,6	23. 10. 18,67				18,92			23. 11. 59,49			T.
	B. (w.) xxiii. 303	48,7	1,9	15,2	28,9	42,7	55,8	9,2	23. 13. 28,92				29,08			23. 15. 9,65			T.
	(i) B. (w.) xxiii. 381	44,1	57,8	11,7	25,3	39,7	52,8	6,7	23. 17. 25,44				25,71			23. 19. 6,28			T.
	(k) 11 Piscium. ....	32,1	45,7	58,7	12,6	26,2	39,4	52,8	23. 20. 12,50				12,67			23. 21. 53,25			T.
	B. (w.) xxiii. 550	34,7	48,1	1,6	15,0	28,7	41,8	55,3	23. 25. 15,03				15,18			23. 26. 55,76			T.
	(k) H. C. 46253. ....	....	2,5	15,8	29,7	43,2	56,3	....	23. 27. 29,50				29,68			23. 29. 10,26			T.
	B. (w.) xxiii. 678	36,0	49,7	3,0	16,6	30,2	43,2	56,8	23. 31. 16,50				16,66			23. 32. 57,25			T.
	B. (w.) xxiii. 748	15,9	29,6	42,7	56,6	10,0	23,4	36,7	23. 34. 56,42				56,53			23. 36. 37,12			T.
	α Andromedæ. ....	20,7	35,8	51,1	6,7	22,1	37,1	52,6	23. 59. 6,59				6,46	100,59		0. 0. 47,08			T.
	β Ceti. ....	48,3	2,5	16,6	31,1	45,3	59,3	13,7	0. 34. 30,97				31,32	100,59		0. 36. 11,98			T.
	(l) Polaris. ....	49,0	34,5	11,5	4,5	55,0	29,2	....	1. 5. 2,84				39,80			1. 58. 53,44			T.
	(m) α Arietis. ....	....	43,7	57,9	12,7	27,7	41,7	....	1. 57. 12,74				12,68	100,73		4. 24. 50,09			T.
	Hygeia. ....	24,7	39,5	54,1	9,2	24,3	39,0	53,8	4. 23. 9,23				9,16						T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,351, -26°,906, -13°,635, +0°,008, +13°,655, +26°,893, +40°,336.

(a) Clouds passing and bad definition. (b) Very faint: could not be seen sooner. (c) 'The north-preceding of a coarse double star.' (d) Very faint from misty cloud. (e) Faint. (f) Through thick cloud. No clock-stars could be obtained. The sky during the month of November, particularly the latter part, was generally overcast. (g) Observed hurriedly: the seconds were not taken from the clock. (h) Very faint. The recorded time was 1<sup>m</sup> greater. (i) Corrected by -1<sup>m</sup> by comparison with an observation in 1849. (k) Corrected by -1<sup>s</sup> for error of counting. (l) 'Very good.' (m) Delay at the Northumberland Dome.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Nov. 27	Aldebaran .....	....	20,2	34,2	48,4	2,6	16,2	....	4. 25. 48,32	-2,2	-4,5	+5,5	48,27	100,99	1,67	4. 27. 29,20			T.
	τ Tauri .....	0,7	15,3	29,8	44,6	59,5	13,7	28,2	4. 31. 44,54				44,48			4. 33. 25,42			T.
	ι Tauri .....	54,3	8,7	23,0	37,8	52,3	6,7	21,1	4. 52. 37,70				37,65			4. 54. 18,61			T.
	δ 2 L .....	42,2	57,1	11,7	26,9	41,9	56,7	11,3	5. 15. 26,83				26,77			5. 17. 7,76			T.
	ο Tauri .....	23,8	38,3	52,7	7,3	22,1	36,3	50,8	5. 17. 7,33				7,27			5. 18. 48,26			T.
	ζ Tauri .....	27,3	41,7	55,7	10,6	25,1	39,4	53,6	5. 27. 10,48				10,43			5. 28. 51,43			T.
Nov. 29	(a) ε Bootis .....	1,1	16,1	31,2	46,7	2,1	17,0	32,1	14. 36. 46,62				46,50	105,04	1,72				T.
Dec. 1	(b) ⊙ 1 L .....	39,7	54,1	8,3	23,2	38,0	52,6	6,5	16. 28. 23,20				23,57			16. 30. 10,46			T.
	(c) Arcturus .....	23,7	38,1	52,2	6,7	21,3	35,2	....	14. 7. 6,68				6,63	108,53	1,73	14. 8. 55,10			T.
	ε Bootis .....	57,7	12,7	27,8	43,2	58,7	13,8	....	14. 36. 43,24				43,12	108,47		14. 38. 31,62			T.
	α Serpentis .....	29,9	43,6	57,0	10,7	24,6	37,7	....	15. 35. 10,69				10,70	108,52		15. 36. 59,28			T.
Dec. 2	(a) ⊙ 1 L .....	57,6	12,2	26,4	41,3	56,0	10,3	....	16. 32. 41,25				41,36			16. 34. 30,00			T.
	⊙ 2 L .....	18,0	32,8	47,1	1,9	16,7	30,9	....	16. 35. 1,85				2,22			16. 36. 50,87			T.
	(d) Arcturus .....	22,1	36,1	50,7	5,0	19,7	33,6	....	14. 7. 5,02				4,97	110,21	1,73				T.
	(e) ε Bootis .....	....	....	26,1	41,7	56,9	11,8	....	14. 36. 41,52				41,40	110,21					T.
Dec. 6	⊙ 1 L .....	15,2	30,2	44,7	59,6	14,3	28,7	....	16. 49. 59,42				59,81		1,66	16. 51. 55,37			T.
	⊙ 2 L .....	36,9	51,3	5,9	20,8	35,6	49,8	....	16. 52. 20,68				21,07			16. 54. 16,64			T.
	α Ophiuchi .....	....	41,1	54,7	8,6	22,6	36,2	....	17. 26. 8,64				8,61	115,61					T.
Dec. 8	(a) Neptune .....	22,1	35,9	49,2	3,2	17,1	30,6	....	22. 41. 3,16				3,41		1,65	22. 43. 2,59			T.
	α Pegasi .....	44,7	58,2	12,0	26,1	40,3	53,7	....	22. 55. 26,11				26,07	119,09		22. 57. 25,26			T.
	α Andromedæ .....	....	....	32,3	47,7	3,2	18,2	....	23. 58. 47,71				47,58	119,32		0. 0. 46,85			T.
	α Arietis .....	10,2	24,8	39,2	54,2	8,7	23,2	....	1. 56. 54,01				53,95	119,42		1. 58. 53,36			T.
	Aldebaran .....	48,0	1,9	15,6	29,7	44,1	57,7	....	4. 25. 29,83				29,78	119,59		4. 27. 29,36			T.
	α <sup>s</sup> Libræ .....	....	14,2	28,0	42,1	56,5	10,0	....	14. 40. 42,16				42,49	120,29	1,58	14. 42. 42,80			T.
	α Coronæ .....	39,7	55,0	9,7	25,3	40,7	55,6	....	15. 26. 25,23				25,12	120,36		15. 28. 25,48			T.
	(e) α Serpentis .....	....	31,7	45,3	58,9	12,7	26,1	....	15. 34. 58,94				58,96	120,38		15. 36. 59,33			T.
Dec. 9	(f)(g) ⊙ 1 L .....	....	34,9	49,4	....	19,0	....	....	17. 3. 4,19				4,55			17. 5. 5,02			T.
	δ Ursæ Minoris .....	....	8,3	51,0	39,5	32,0	14,0	....	18. 17. 40,91				30,96						T.
Dec. 10	(h) α Andromedæ .....	59,5	15,1	30,1	45,8	1,2	16,2	31,4	0. 0. 45,62	-18,1		+10,0	44,41	2,47	1,54	0. 0. 46,79			T.
	(f) Aldebaran .....	45,7	59,8	13,7	27,9	42,1	55,8	9,9	4. 27. 27,84				26,87	2,52		4. 27. 29,54			T.
	(f) Calliope .....	....	....	....	43,2	59,0	....	27,8	4. 49. 43,29				42,14			4. 49. 44,83			T.
	(f) β Tauri .....	12,7	28,0	43,2	58,7	14,1	29,3	44,4	5. 16. 58,63				57,41	2,78		5. 17. 0,13			T.
Dec. 11	(f)(i) ⊙ 2 L .....	28,7	43,2	57,7	12,7	27,5	41,8	56,2	17. 16. 12,54				12,07		1,57	17. 16. 15,57			T.
	(k) Neptune .....	26,3	40,0	53,5	7,2	21,2	34,6	48,1	22. 43. 7,27				6,69			22. 43. 10,54			T.
	α Pegasi .....	40,4	54,5	8,2	22,1	36,4	50,1	4,0	22. 57. 22,24				21,28	3,85		22. 57. 25,15			T.
	α Arietis .....	6,2	21,1	35,4	50,2	5,1	19,7	34,0	1. 58. 50,24				49,20	4,15		1. 58. 53,27			T.
	(f) Calliope .....	52,8	7,7	22,5	....	....	....	....	4. 48. 37,71				36,56			4. 48. 40,81			T.
	α Orionis .....	28,8	42,4	55,7	9,6	23,3	36,5	50,2	5. 47. 9,50				8,65	4,26		5. 47. 12,97			T.
Dec. 14	(m) ⊙ 2 L .....	....	....	....	....	38,2	53,1	7,3	17. 29. 23,44				22,98		1,58	17. 29. 31,25			T.
	α Andromedæ .....	53,3	8,4	23,7	39,2	54,6	9,7	24,8	0. 0. 39,10				37,91	8,92		0. 0. 46,61			T.
	B. (w.) o. 195 .....	55,6	9,1	22,3	36,1	49,6	3,0	16,3	0. 11. 36,00				35,31			0. 11. 44,02			T.
	B. (w.) o. 258 .....	19,1	32,7	46,0	59,7	13,3	26,4	40,0	0. 14. 59,60				58,88			0. 15. 7,60			T.
	(n) 45 Piscium .....	18,0	31,3	44,7	58,6	12,5	25,7	39,2	0. 17. 58,57				57,74			0. 18. 6,46			T.
	(f) B. (w.) o. 355 .....	48,8	2,2	15,6	29,1	42,9	56,3	9,7	0. 21. 29,23				28,49			0. 21. 37,21			T.
	(f)(o) B. (w.) o. 418 .....	11,8	25,6	38,8	52,7	6,3	19,7	33,2	0. 24. 52,58				51,75			0. 25. 0,48			T.
	β Ceti .....	20,8	35,1	49,2	3,5	18,0	32,1	46,2	0. 36. 3,56				3,10	8,62		0. 36. 11,84			T.
	(a) α Ceti .....	47,5	0,9	14,1	27,9	41,5	54,7	8,1	2. 54. 27,82				27,05	8,75		2. 54. 35,94			T.
	Hygeia .....	47,3	2,0	16,5	31,6	46,4	0,8	15,7	4. 10. 31,47				30,41			4. 10. 39,38			T.
	(p) Calliope .....	40,1	55,2	10,0	25,0	40,3	55,1	10,1	4. 45. 25,12				23,99			4. 45. 33,00			T.
	α Orionis .....	24,0	37,6	51,0	4,7	18,4	32,0	45,3	5. 47. 4,71				3,87	9,09		5. 47. 12,95			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.351, -26<sup>s</sup>.906, -13<sup>s</sup>.635, +0<sup>s</sup>.008, +13<sup>s</sup>.655, +26<sup>s</sup>.893, +40<sup>s</sup>.336. From Dec. 10, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) Faint from cloud. (b) 2 L hid by cloud. (c) Disturbance by noise. Between this and the preceding observation wire VII was broken: cause unknown. (d) Distraction by noise at the first three wires. (e) Very faint: could not be seen earlier. (f) Cloudy. (g) The observation was considered doubtful. (h) Before this observation wire VII had been replaced. (i) Unsteady. (k) Wire IV was set down 17.2. (l) Bad definition. (m) Corrected by -50<sup>s</sup>. (n) Corrected by -20<sup>s</sup>. (o) 'A fainter follows.' (p) 'A brighter object northward: this easily observed.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Dec. 14	$\alpha$ Coronæ .....	31,6	46,8	1,6	17,1	32,2	47,2	2,2	15.28.16,96	-18,1	-4,4	+10,0	15,81	9,80	1,48	15.28.25,56			T.
Dec. 15	⊙ 1 L.....	41,5	56,1	10,6	25,6	40,6	55,1	9,6	17.31.25,59				25,01			17.31.34,89			T.
	⊙ 2 L.....	3,6	18,6	32,9	47,8	2,8	17,2	31,9	17.33.47,83				47,25			17.33.57,13			T.
	$\alpha$ Andromedæ...	51,9	7,1	22,2	37,7	53,2	8,2	23,5	0.0.37,69				36,50	10,31		0.0.46,78			T.
	(a) Lutetia .....	11,0	24,7	38,0	52,2	6,5	19,8	33,5	2.25.52,24				51,33			2.26.1,76			T.
	$\alpha$ Ceti .....	...	...	12,6	26,1	39,7	53,2	6,5	2.54.26,14				25,37	10,43		2.54.35,83			T.
	(b) Hygeia .....	0,0	15,0	29,3	...	...	...	...	4.9.44,33				43,27			4.9.53,81			T.
	(c) Calliope .....	37,0	52,1	7,0	...	37,2	52,1	7,1	4.44.22,08				20,95			4.44.31,52			T.
	Rigel .....	38,1	51,7	5,2	18,8	32,5	46,0	59,6	5.7.18,85				18,29	10,45		5.7.28,89			T.
	$\beta$ Tauri .....	4,7	20,2	35,2	50,9	6,3	21,3	36,8	5.16.50,77				49,57	10,69		5.17.0,18			T.
	(d) $\alpha$ Coronæ .....	...	...	...	15,7	30,8	45,8	0,8	15.28.15,53				14,38	11,25	1,43	15.28.25,55			T.
	(e) $\alpha$ Serpentis .....	8,4	21,8	35,4	49,1	2,8	16,1	29,8	15.36.49,06				48,23	11,25		15.36.59,41			T.
	$\delta$ Ophiuchi .....	45,3	58,8	12,1	25,9	39,7	52,8	6,1	16.6.25,81				25,17	11,14		16.6.36,38			T.
	$\alpha$ Herculis .....	2,3	16,3	30,0	44,0	58,1	11,8	25,7	17.7.44,03				43,08	11,28		17.7.54,35			T.
	$\alpha$ Ophiuchi .....	12,7	26,7	39,9	54,1	8,0	21,5	35,4	17.27.54,04				53,13	11,18		17.28.4,42			T.
Dec. 16	⊙ 1 L.....	6,1	20,7	35,2	50,3	5,1	19,5	34,2	17.35.50,15				49,69			17.36.0,99			T.
	⊙ 2 L.....	28,1	43,0	57,5	12,4	27,2	41,7	56,6	17.38.12,35				11,89			17.38.23,19			T.
	(f) $\delta$ Ursæ Minoris..	28,0	15,2	58,3	50,0	38,5	23,0	8,5	18.19.48,79				18,43						T.
Dec. 17	(g) ⊙ 1 L.....	30,5	45,3	59,9	14,8	30,0	44,2	59,0	17.40.14,81				14,35		1,59	17.40.27,12			T.
	⊙ 2 L.....	52,9	7,5	22,2	37,1	52,0	6,5	21,2	17.42.37,06				36,60			17.42.49,37			T.
	(h) $\gamma$ Aquilæ.....	...	...	48,1	2,0	15,8	29,2	43,0	19.39.1,95				1,05	12,93		19.39.13,95			T.
	$\alpha$ Aquilæ.....	41,5	55,1	8,6	22,6	36,2	49,4	2,9	19.43.22,33				21,48	12,86		19.43.34,39			T.
	(i) $\beta$ Aquilæ.....	...	24,3	37,6	51,3	4,8	18,2	31,7	19.47.51,22				50,40	12,86		19.48.3,31			T.
	(i) $\gamma$ 1 L.....	...	...	22,2	36,1	50,5	4,2	18,3	23.26.36,26				35,70			23.26.48,85			T.
	27 Piscium.....	14,5	28,2	41,4	55,2	9,0	22,0	35,6	23.50.55,13				54,52			23.51.7,70			T.
	(k) $\alpha$ Andromedæ...	...	...	...	...	50,2	5,1	20,2	0.0.34,56				33,37	13,41		0.0.46,56			T.
	(l) $\beta$ Ceti.....	16,3	30,7	44,7	59,1	13,5	27,6	41,6	0.35.59,08				58,62	13,07		0.36.11,85			T.
	(m) Hygeia .....	28,9	43,7	58,1	13,0	27,7	42,3	57,1	4.8.12,97				11,90			4.8.25,36			T.
	Polaris SP.....	24,5	9,0	43,0	39,0	26,0	4,5	52,5	13.4.36,93				49,37		1,74	13.6.3,48			T.
	(n) Polaris SP. M....	23,0	8,5	53,5	39,0	22,0	6,5	50,5	13.4.37,94				50,38			13.6.4,49			T.
	Spica .....	30,8	44,6	58,2	12,1	25,7	39,2	52,9	13.17.11,93				11,37	14,17		13.17.25,49			T.
	$\epsilon$ Bootis.....	33,4	48,6	3,7	19,0	34,6	49,2	4,3	14.38.18,97				17,80	14,18		14.38.32,02			T.
	$\alpha$ Coronæ.....	27,1	42,3	57,2	12,4	27,9	42,7	57,8	15.28.12,48				11,33	14,35		15.28.25,61			T.
	(o) $\alpha$ Serpentis.....	...	...	...	46,1	59,7	13,2	26,7	15.36.46,05				45,22	14,30		15.36.59,51			T.
	$\alpha$ Ophiuchi.....	9,7	23,2	37,0	50,8	4,7	18,5	32,1	17.27.50,85				49,94	14,39		17.28.4,37			T.
Dec. 18	⊙ 1 L.....	55,4	10,1	24,5	39,6	54,5	9,0	23,4	17.44.39,50				39,04			17.44.53,48			T.
	⊙ 2 L.....	17,7	32,4	46,9	1,9	16,8	31,2	46,0	17.47.1,84				1,38			17.47.15,83			T.
	(p) $\gamma$ Aquilæ.....	19,2	32,9	46,6	0,2	14,1	27,6	41,2	19.38.60,25				59,35	14,63		19.39.13,93			T.
	$\alpha$ Aquilæ.....	39,8	53,7	6,9	20,7	34,6	47,8	1,3	19.43.20,68				19,83	14,51		19.43.34,42			T.
	Neptune.....	37,9	51,6	4,9	18,7	32,6	45,8	59,7	22.43.18,75				18,18			22.43.32,99			T.
	(q) 27 Piscium.....	...	26,7	...	53,7	7,1	20,2	...	23.50.53,50				52,89			23.51.7,78			T.
	(p) $\alpha$ Andromedæ...	47,2	2,5	17,4	33,2	48,6	3,7	18,7	0.0.33,04				31,85	14,92		0.0.46,75			T.
Dec. 20	(c) Neptune.....	41,7	55,3	8,8	22,7	36,4	49,8	3,3	22.43.22,57			-4,3	22,00		1,77	22.43.40,43			T.
	$\alpha$ Pegasi.....	25,7	39,8	53,7	7,7	21,6	35,5	49,2	22.57.7,60				6,66	18,36		22.57.25,10			T.
	$\alpha$ Andromedæ...	43,7	58,8	13,7	29,4	44,8	59,8	15,1	0.0.29,33				28,15	18,59		0.0.46,67			T.
	H. C. 130.....	8,2	21,8	35,1	48,9	2,3	15,8	29,2	0.5.48,76				47,95			0.6.6,48			T.
	H. C. 245.....	34,6	48,2	1,3	15,2	28,8	42,2	55,6	0.9.15,13				14,48			0.9.33,01			T.
	B. (w.) o. 240...	57,2	10,7	24,2	37,7	51,3	4,9	18,2	0.13.37,75				37,14			0.13.55,67			T.
	45 Piscium.....	8,2	21,6	35,1	48,8	2,4	15,8	29,4	0.17.48,76				47,93			0.18.6,47			T.
	(g) B. (w.) o. 365....	4,1	17,8	31,0	44,9	58,2	11,7	25,2	0.21.44,70				43,93			0.22.2,48			T.
	B. (w.) o. 402....	...	38,7	51,7	5,3	18,8	32,3	45,7	0.24.5,35				4,60			0.24.23,15			T.
	B. (w.) o. 477....	55,8	9,3	22,6	36,3	50,2	3,3	16,7	0.27.36,32				35,57			0.27.54,12			T.
	B. (w.) o. 511....	29,2	42,7	56,0	9,8	23,2	36,8	50,1	0.30.9,69				8,92			0.30.27,48			T.
	B. (w.) o. 567....	19,2	33,0	46,1	0,0	13,4	26,6	40,0	0.32.59,75				59,06			0.33.17,62			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Extremely faint. (b) 'A brighter preceded, and a fainter of less N.P.D. by 2' followed.' (c) 'Good.' (d) Corrected by -40°. (e) 'Completely disturbed.' (f) Very faint at wires III and IV, at the rest good. (g) Great motion. (h) Very faint. (i) Much obscured by cloud. (k) Irid by cloud at the other wires. (l) Bad illumination. (m) 'Good.' The night was afterwards cloudy. (n) Bad definition. (o) Not seen sooner from its faintness. (p) Only just visible. (q) Cloudy.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Asimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Dec. 20	$\beta$ Ceti .....	11,1	25,2	39,2	53,7	8,1	22,0	36,1	0.35.53,63	-18,1	-4,3	+10,0	53,18	18,47	1,77	0.36.11,74			T.
	Polaris .....	40,5	30,5	4,0	58,0	49,0	26,5	11,3	1.6.57,11				46,48			1.6.5,08			T.
	Polaris M. ....	41,5	26,5	11,5	58,0	41,0	25,0	8,5	1.6.55,63				45,00			1.6.3,60			T.
	$\mu$ Piscium .....	30,2	43,7	57,1	10,9	24,5	37,8	51,2	1.22.10,77				9,97			1.22.28,59			T.
	$\gamma$ 1 L. ....	56,6	10,3	24,2	38,2	52,2	5,7	19,3	1.42.38,07				37,27			1.42.55,92			T.
	(a) Lutetia .....				17,1		45,0	53,7	2.25.17,31				16,38			2.25.35,08			T.
	(b) Thalia .....	0,8	15,1	28,7	43,2	57,2	11,0	25,2	3.8.43,03				42,07			3.9.0,82			T.
	(c) Hygeia .....		32,1	46,2	1,8	16,7	31,2	46,1	4.6.1,66				0,60			4.6.19,42			T.
	(d) Calliope .....				19,0	34,0	49,2	4,1	4.39.18,95				17,81			4.39.36,67			T.
	$\beta$ Tauri .....	56,5	11,9	27,1	42,6	57,9	13,1	28,4	5.16.42,50				41,31	19,00		5.17.0,22			T.
	$\alpha$ Ophiuchi .....	4,1	17,9	31,6	45,7	59,6	13,0	26,8	17.27.45,53				44,62	19,75	1,74	17.28.4,41			T.
Dec. 21	(e) $\odot$ 1 L. ....			39,0	53,8		23,0	38,0	17.57.53,80				53,34			17.58.13,16			T.
	$\odot$ 2 L. ....	31,8	46,8	1,2	16,1	31,0		0,2	18.0.16,08				15,62			18.0.35,45			T.
	$\gamma$ Aquilæ .....	14,0	27,7	41,1	55,1	8,8	22,2	35,8	19.38.54,96				54,06	19,93		19.39.14,00			T.
	$\alpha$ Aquilæ .....	34,5	48,1	1,3	15,2	29,1	42,3	56,2	19.43.15,24				14,40	19,95		19.43.34,35			T.
	(f) $\beta$ Aquilæ .....		17,1	30,3	44,2	57,9	11,1	24,7	19.47.44,12				43,31	19,95		19.48.3,26			T.
	(g) $\alpha$ Arietis .....	50,2	4,7	19,2	34,1	48,7	3,1	17,6	1.58.33,94				32,92	20,35		1.58.53,32			T.
	Hygeia .....	35,7	50,8	5,6	20,5	35,2	49,7	4,2	4.5.20,24				19,18			4.5.39,74			T.
	Aldebaran .....	27,7	41,6	55,6	9,8	24,1	37,8	51,8	4.27.9,78				8,83	20,61		4.27.29,41			T.
	(h) Calliope .....			5,7	21,3	36,2	51,0	6,2	4.38.21,02				19,88			4.38.40,47			T.
	(g) $\beta$ Tauri .....	55,0	10,2	25,2	40,9	56,2	11,3	26,7	5.16.40,78				39,59	20,72		5.17.0,23			T.
Dec. 23	$\odot$ 1 L. ....	59,4	13,9	28,7	43,4	58,4	12,7	27,5	18.6.43,43				42,97			18.7.6,28			C.
	$\odot$ 2 L. ....	21,6	36,2	51,0	5,8	20,7	35,2	50,0	18.9.5,79				5,33			18.9.28,64			C.
Dec. 27	Rigel .....	17,8	31,3	45,1	58,7	12,6	26,1	39,5	5.6.58,73		-4,2		58,18	30,62	1,76				B.
	Sirius .....	28,3	42,3	56,2	10,4	24,7	38,5	52,3	6.38.10,38				9,90	30,81					B.
	$\gamma$ 2 L. ....		18,4	33,2	48,7	4,0	18,6		7.45.48,58				47,54			7.46.18,40			B.
Dec. 28	(i) $\odot$ 1 L. ....	2,7	17,2	31,9	46,8	1,8	16,0		18.28.46,74				46,28		1,70	18.29.17,95			B.
	$\odot$ 2 L. ....	25,0	39,7	54,2	9,0	24,0	38,2	53,2	18.31.9,05				8,59			18.31.40,26			B.
	$\alpha$ Aquilæ .....	22,8	36,1	49,7	3,4	17,2	30,7	44,1	19.43.3,43				2,59	31,77		19.43.34,35			B.
	$\alpha$ Ceti .....	23,7	37,2	50,5	4,2	17,9	31,2	44,8	2.54.4,21				3,45	32,28		2.54.35,72			B.
	Hygeia .....	13,1	28,3	42,9	57,4		27,9		4.0.57,70				56,65			4.1.28,99			B.
	Aldebaran .....	15,9	30,0	43,7	57,9	12,2	26,0	40,2	4.26.57,99				57,05	32,41		4.27.29,42			B.
	Calliope .....	27,0	41,6	56,1	11,2	26,6	42,0		4.32.11,63				10,50			4.32.42,88			B.
	Rigel .....	16,2	29,7	43,3	57,3	10,7	24,0	37,7	5.6.56,99				56,44	32,36		5.7.28,86			B.
	Sirius .....	26,8	40,1	54,6	8,7	23,1	36,7	50,8	6.38.8,69				8,21	32,51		6.38.40,74			B.
Dec. 29	Castor .....	52,6	8,2	24,2	40,2	56,2	12,0	27,9	7.24.40,18				38,88	34,25	1,62				B.
	(k) Pollux .....	0,2	15,6	30,3	46,2	1,6	16,7	31,7	7.35.46,05				44,87	34,21					B.
Dec. 30	(k)(l) $\odot$ 1 L. ....	50,9	5,7	20,0	35,0	49,9			18.37.34,97				34,51		1,65	18.38.9,44			B.
	$\odot$ 2 L. ....		28,0	42,1	57,0	12,0	26,3		18.39.57,08				56,62			18.40.31,55			B.
	$\alpha$ Arietis .....		49,3	4,2	19,0	33,7	47,9		1.58.18,82				17,79	35,40		1.58.53,23			B.
	Hygeia .....		23,8	38,8	53,3	8,4	22,7		3.59.53,40				52,35			4.0.27,92			B.
	H. C. 7999 .....	11,3	26,0	40,2	55,1	9,9	24,2	38,7	4.8.55,06				54,04			4.9.29,62			B.
	H. C. 8122 .....	37,2	51,2	5,2	19,8	34,0	48,0	2,1	4.12.19,65				18,69			4.12.54,28			B.
	(m) H. C. 8249 .....	38,6	52,7	6,6	20,8	35,0	48,9	3,0	4.15.20,80				19,84			4.15.55,43			B.
	(n) H. C. 8368 .....		24,9	39,1	54,0	9,0	23,3		4.18.54,06				53,01			4.19.28,61			B.
	B.A.C. 1388 .....		37,8	51,8	6,2	20,7	34,8		4.21.6,26				5,27			4.21.40,87			B.
	Aldebaran .....	12,7	26,6	40,3	54,7	9,2	22,7	36,6	4.26.54,69				53,75	35,71		4.27.29,35			B.
	$\alpha$ Orionis .....	57,4	11,3	24,7	38,2	52,2	5,3	19,0	5.46.38,30				37,47	35,64		5.47.13,17			B.
	Sirius .....	23,3	37,3	51,2	5,6	19,8	33,6	47,6	6.38.5,49				5,01	35,73		6.38.40,77			B.
Dec. 31	$\odot$ 1 L. ....	14,7	29,6	43,9	59,1	13,8	28,2	42,7	18.41.58,86				58,40		1,71	18.42.34,76			C.
	(o) $\odot$ 2 L. ....	36,7	51,4	6,1	20,9	35,6	50,0	4,7	18.44.20,77				20,31			18.44.56,67			C.
	(p) $\alpha$ Aquilæ .....		31,4	44,8	58,7	12,4	25,7		19.42.58,60				57,76	36,61					C.
	$\alpha$ Ceti .....	18,8	32,3	45,6	59,2	13,0	26,2	39,7	2.53.59,26				58,50	37,21		2.54.35,70			B.
	Aldebaran .....	11,1	25,2	39,0	53,2	7,3	21,2	35,2	4.26.53,17				52,23	37,23		4.27.29,54			B.
	$\beta$ Tauri .....	38,1	53,7	8,8	24,1	39,7	54,7	9,9	5.16.24,14				22,95	37,42		5.17.0,32			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Excessively faint: these wires were not unsatisfactory. A brighter object of less N.P.D. followed by 17°,58. (b) 'Good: easily observed.'  
(c) Faint. A brighter object of considerably greater N.P.D. preceded a few seconds. (d) 'The last of three objects.'  
(e) Without the dark glass: the limbs barely traceable. (f) Only just visible. (g) Faint from cloud. (h) Very faint. (i) Through foggy cloud: no definition. (k) Very high wind. (l) All the wires of I L have been increased by 1" conjecturally, the measured diameter being too large. Probably the loss of a second was caused by the noise of the wind. (m) 'A very faint star preceded about 3'. (n) 'One north-following.' (o) Corrected by -10". (p) Cloudy and the observation unsatisfactory.





MEAN RIGHT ASCENSIONS, JANUARY 1, 1852,

OF THE

FUNDAMENTAL STARS

OBSERVED IN THE YEAR 1852,

AS DEDUCED FROM EACH DAY'S OBSERVATION.

Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>α</i> Andromedæ.			Polaris continued.			Aldebaran continued.			Sirius.		
Feb. 3	+1,56	0. 0. 44,76	Sept. 29	-54,49	1. 5. 39,75	Dec. 21	-3,46	4. 27. 25,95	Jan. 17	-0,63	6. 38. 37,56
24	+1,73	44,62	29	-54,49	41,05	28	-3,48	25,94	29	-0,60	37,68
Apr. 12	+1,47	44,66	29	-54,60	37,67	30	-3,48	25,87	Feb. 3	-0,57	37,58
19	+1,35	44,72	29	-54,60	41,70	31	-3,48	26,06	6	-0,54	37,73
20	+1,33	44,69	Oct. 1	-54,98	39,48	Rigel.			28	-0,26	37,71
22	+1,29	44,68	Nov. 2	-53,81	36,82				Mar. 5	-0,16	37,64
25	+1,22	44,68	2	-53,67	38,95				6	-0,14	37,66
Sept. 13	-2,53	44,72	3	-53,50	38,95				8	-0,10	37,71
17	-2,57	44,79	3	-53,32	37,08				12	-0,03	37,67
21	-2,59	44,80	3	-53,32	37,15	Jan. 17	-0,28	5. 7. 25,76	13	-0,01	37,75
25	-2,61	44,75	Dec. 17	-29,24	34,24	23	-0,24	25,75	22	+0,16	37,66
Oct. 7	-2,64	44,86	17	-29,24	35,25	30	-0,17	25,68	Apr. 20	+0,69	37,56
11	-2,63	44,70	20	-27,33	37,75	Feb. 6	-0,09	25,68	24	+0,75	37,72
12	-2,63	44,84	20	-27,33	36,27	Mar. 22	+0,68	25,70	July 4	+0,95	37,68
18	-2,62	44,70	<i>α</i> Arietis.			Apr. 13	+1,02	25,65	5	+0,94	37,78
19	-2,61	44,82				21	+1,11	25,65	6	+0,93	37,49
20	-2,61	44,67				24	+1,14	25,69	7	+0,91	37,58
Nov. 27	-2,28	44,80				June 21	+0,95	25,74	9	+0,89	37,66
Dec. 8	-2,13	44,72	Nov. 2	-2,96	1. 58. 50,28	July 4	+0,72	25,80	12	+0,85	37,56
10	-2,11	44,68	17	-3,00	50,42	9	+0,62	25,67	22	+0,70	37,73
14	-2,06	44,56	27	-2,99	50,45	15	+0,49	25,67	Dec. 28	-3,13	37,61
15	-2,04	44,74	Dec. 8	-2,95	50,41	Nov. 17	-2,75	25,65	30	-3,15	37,62
17	-2,01	44,55	11	-2,93	50,34	19	-2,78	25,62	Castor.		
18	-2,00	44,75	21	-2,85	50,47	26	-2,90	25,64			
20	-1,97	44,70	30	-2,77	50,46	Dec. 15	-3,11	25,78			
<i>β</i> Ceti.			<i>α</i> Ceti.			28	-3,17	25,69			
						<i>β</i> Tauri.			Jan. 2	-0,30	7. 25. 9,01
									23	-0,54	8,97
									Feb. 4	-0,56	9,07
									6	-0,56	9,00
Sept. 13	-2,35	0. 36. 9,66	Jan. 30	+0,57	2. 54. 32,82	Jan. 17	-0,24	5. 16. 56,33	10	-0,55	9,05
16	-2,40	9,58	Feb. 3	+0,63	32,87	Feb. 6	-0,05	56,30	19	-0,49	8,90
21	-2,45	9,66	24	+0,94	32,96	10	0,00	56,22	21	-0,47	9,08
29	-2,52	9,60	Nov. 2	-2,77	32,93	20	+0,16	56,34	Mar. 2	-0,34	9,02
Oct. 12	-2,58	9,88	17	-2,89	32,93	Apr. 23	+1,25	56,41	5	-0,30	9,01
23	-2,58	9,50	18	-2,90	32,82	24	+1,26	56,26	8	-0,25	8,98
Nov. 27	-2,38	9,60	Dec. 14	-2,93	33,01	July 4	+0,72	56,32	10	-0,22	9,07
Dec. 14	-2,19	9,65	15	-2,93	32,90	Nov. 17	-3,35	56,35	13	-0,16	9,01
17	-2,16	9,69	28	-2,86	32,86	19	-3,40	56,42	16	-0,11	8,96
20	-2,12	9,62	31	-2,84	32,86	26	-3,55	56,31	20	-0,04	8,99
Polaris.			Aldebaran.			Dec. 10	-3,78	56,35	23	+0,02	8,90
						15	-3,85	56,33	24	+0,63	8,82
						20	-3,90	56,32	June 22	+1,03	9,04
						21	-3,90	56,33	Aug. 4	+0,42	8,95
						31	-3,96	56,36	9	+0,31	8,94
Mar. 23	+45,66	1. 5. 34,32	Jan. 23	+0,02	4. 27. 26,03	<i>α</i> Orionis.			Procyon.		
23	+45,72	34,30	29	+0,09	25,99						
Apr. 10	+46,20	36,59	30	+0,10	25,98						
11	+46,13	37,63	Feb. 3	+0,15	25,90						
12	+46,11	34,69	10	+0,25	26,12						
12	+46,10	31,92	20	+0,41	25,97	Jan. 23	-0,30	5. 47. 9,58	Jan. 2	-0,31	7. 31. 33,27
25	+42,91	37,04	Apr. 1	+1,09	25,96	30	-0,26	9,66	23	-0,52	33,18
26	+42,77	37,21	10	+1,20	25,84	Mar. 2	+0,15	9,67	29	-0,53	33,19
May 4	+39,81	34,33	12	+1,22	25,83	4	+0,18	9,53	Feb. 3	-0,53	33,28
6	+38,46	34,33	13	+1,23	25,96	Apr. 13	+0,86	9,64	4	-0,53	33,26
14	+34,80	37,67	26	+1,32	25,82	24	+0,99	9,61	5	-0,53	33,28
15	+34,51	37,75	May 19	+1,29	25,91	May 19	+1,15	9,60	10	-0,52	33,14
Sept. 13	-50,14	36,49	June 21	+0,82	25,89	July 4	+0,73	9,65	19	-0,46	33,34
14	-50,29	36,61	July 5	+0,49	25,84	7	+0,68	9,59	21	-0,44	33,26
14	-50,29	36,94	6	+0,47	25,81	12	+0,58	9,61	Mar. 5	-0,30	33,24
16	-51,27	37,75	Nov. 2	-2,86	26,07	15	+0,52	9,65	8	-0,26	33,23
16	-51,27	34,68	17	-3,13	25,97	29	+0,21	9,60	10	-0,23	33,20
17	-51,48	35,03	18	-3,15	25,97	Nov. 26	-3,03	9,66	16	-0,14	33,37
17	-51,48	35,93	19	-3,16	25,96	Dec. 11	-3,28	9,69	20	-0,08	33,26
17	-51,71	34,85	26	-3,27	26,06	14	-3,33	9,62	23	-0,03	33,15
20	-52,90	35,88	27	-3,28	25,92	30	-3,48	9,69	Apr. 13	+0,32	33,20
21	-53,17	35,44	Dec. 8	-3,39	25,97				24	+0,49	33,33
21	-53,17	37,75	10	-3,41	26,13						
22	-53,29	36,51									



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
Procyon continued.			$\alpha$ Hydræ continued.			$\beta$ Leonis.			Spica continued.		
June 24	+ 0,86	7. 31. 33,16	Mar. 4	- 0,73	9. 20. 18,95	Mar. 3	- 0,76	11. 41. 30,57	July 12	- 0,67	13. 17. 24,24
July 7	+ 0,78	33,42	5	- 0,73	18,93	4	- 0,77	30,53	Sept. 14	- 0,05	24,12
20	+ 0,64	33,19	12	- 0,69	18,97	5	- 0,78	30,46	17	- 0,03	24,25
Aug. 3	+ 0,43	33,21	23	- 0,59	19,00	13	- 0,84	30,43	Dec. 17	- 1,42	24,07
4	+ 0,41	33,18	Apr. 1	- 0,48	19,00	19	- 0,87	30,49	Arcturus.		
9	+ 0,32	33,18	10	- 0,36	18,91	20	- 0,88	30,51			
Sept. 1	- 0,18	33,19	12	- 0,33	18,84	22	- 0,88	30,46			
Pollux.			16	- 0,28	18,90	23	- 0,88	30,54			
			26	- 0,13	18,93	Apr. 1	- 0,89	30,43	Apr. 19	- 1,13	14. 8. 54,69
			27	- 0,12	19,03	14	- 0,85	30,47	20	- 1,14	54,80
			May 1	- 0,06	19,03	16	- 0,84	30,45	21	- 1,15	54,72
Jan. 2	- 0,28	7. 36. 15,17	July 5	+ 0,54	18,95	17	- 0,83	30,40	23	- 1,16	54,70
29	- 0,56	15,13	Sept. 13	0,00	18,87	22	- 0,81	30,49	27	- 1,18	54,72
Feb. 3	- 0,56	15,19	Regulus.			23	- 0,80	30,45	May 3	- 1,21	54,71
4	- 0,56	15,18				26	- 0,78	30,47	5	- 1,21	54,82
5	- 0,56	15,16				27	- 0,77	30,47	8	- 1,22	54,68
10	- 0,55	15,18				May 1	- 0,74	30,38	11	- 1,23	54,66
19	- 0,50	15,19	Feb. 6	- 0,58	10. 0. 29,09	5	- 0,71	30,60	12	- 1,23	54,61
21	- 0,48	15,17	10	- 0,63	29,30	6	- 0,70	30,35	15	- 1,23	54,65
28	- 0,41	15,17	11	- 0,64	29,13	14	- 0,63	30,47	June 4	- 1,17	54,68
Mar. 2	- 0,38	15,08	18	- 0,70	29,14	July 12	- 0,02	30,45	8	- 1,16	54,74
3	- 0,36	15,15	Mar. 2	- 0,75	29,18	15	0,00	30,38	24	- 1,02	54,82
8	- 0,29	15,13	3	- 0,75	29,06	16	+ 0,01	30,45	July 3	- 0,94	54,62
10	- 0,26	15,20	6	- 0,74	29,10	Sept. 2	+ 0,21	30,40	5	- 0,91	54,69
16	- 0,15	15,14	22	- 0,68	29,12	$\beta$ Corvi.			14	- 0,80	54,71
20	- 0,09	15,07	23	- 0,67	29,12				15	- 0,79	54,79
23	- 0,03	15,05	Apr. 1	- 0,60	28,99				22	- 0,70	54,83
Apr. 10	+ 0,30	15,18	2	- 0,59	29,20	Mar. 19	- 1,00	12. 26. 37,44	23	- 0,68	54,72
24	+ 0,54	15,17	3	- 0,58	29,09	20	- 1,01	37,41	26	- 0,64	54,74
June 24	+ 0,96	15,10	10	- 0,50	29,17	23	- 1,03	37,49	Aug. 9	- 0,44	54,69
July 7	+ 0,87	15,24	12	- 0,48	29,00	Apr. 1	- 1,08	37,37	13	- 0,38	54,67
8	+ 0,86	15,26	13	- 0,46	29,22	2	- 1,09	37,41	31	- 0,14	54,71
20	+ 0,69	15,02	14	- 0,45	29,10	12	- 1,11	37,39	Sept. 2	- 0,11	54,68
Aug. 4	+ 0,44	14,96	16	- 0,43	29,06	13	- 1,11	37,49	3	- 0,10	54,66
9	+ 0,34	15,06	20	- 0,38	29,22	14	- 1,11	37,41	17	+ 0,06	54,77
Sept. 1	- 0,22	15,13	21	- 0,37	29,26	16	- 1,10	37,48	29	+ 0,15	54,68
$\epsilon$ Hydræ.			22	- 0,35	29,16	17	- 1,10	37,52	Oct. 18	+ 0,19	54,71
			27	- 0,29	29,13	19	- 1,10	37,49	20	+ 0,18	54,86
			May 1	- 0,24	29,12	23	- 1,09	37,49	Nov. 3	+ 0,08	54,50
			5	- 0,18	29,13	26	- 1,08	37,44	Dec. 1	- 0,40	54,70
Feb. 4	- 0,61	8. 38. 56,15	July 5	+ 0,38	29,04	May 4	- 1,05	37,45	$\epsilon$ Bootis.		
11	- 0,63	56,15	10	+ 0,40	29,09	6	- 1,04	37,46			
18	- 0,63	56,20	12	+ 0,41	29,11	11	- 1,01	37,37			
19	- 0,63	56,18	13	+ 0,41	29,26	12	- 1,00	37,40			
21	- 0,63	56,19	Sept. 13	+ 0,02	29,10	15	- 0,98	37,43	Apr. 23	- 1,27	14. 38. 31,35
28	- 0,60	56,09	28	- 0,24	29,13	19	- 0,95	37,35	26	- 1,30	31,39
Mar. 2	- 0,58	56,16	$\delta$ Leonis.			Spica.			27	- 1,31	31,25
3	- 0,57	56,11							May 3	- 1,35	31,37
12	- 0,49	56,01							4	- 1,35	31,22
13	- 0,48	56,11	Mar. 2	- 0,82	11. 6. 13,97	Apr. 2	- 0,99	13. 17. 24,22	8	- 1,38	31,32
20	- 0,40	56,24	4	- 0,83	13,93	10	- 1,05	24,15	14	- 1,40	31,33
22	- 0,38	56,10	6	- 0,84	13,91	13	- 1,07	24,12	15	- 1,40	31,40
Apr. 2	- 0,22	56,14	19	- 0,88	13,83	14	- 1,07	24,17	19	- 1,41	31,31
3	- 0,20	56,22	23	- 0,88	13,97	17	- 1,08	24,11	June 4	- 1,38	31,34
10	- 0,10	56,25	Apr. 1	- 0,85	13,88	19	- 1,10	24,17	30	- 1,18	31,33
12	- 0,07	56,09	2	- 0,85	13,74	22	- 1,10	24,14	July 1	- 1,17	31,36
13	- 0,05	56,16	3	- 0,84	13,84	24	- 1,11	24,24	3	- 1,14	31,33
20	+ 0,05	56,12	17	- 0,75	13,87	26	- 1,11	24,18	5	- 1,12	31,30
$\alpha$ Hydræ.			19	- 0,73	13,82	May 3	- 1,12	24,18	15	- 0,99	31,41
			May 3	- 0,59	13,86	4	- 1,12	24,16	Aug. 2	- 0,72	31,17
			4	- 0,58	13,92	6	- 1,12	24,15	Sept. 17	+ 0,01	31,45
			5	- 0,56	13,87	8	- 1,12	24,19	Dec. 1	- 0,19	31,43
Feb. 5	- 0,70	9. 20. 18,90	July 12	+ 0,15	13,77	15	- 1,10	24,16	17	- 0,58	31,44
11	- 0,74	18,96	13	+ 0,16	13,85	19	- 1,09	24,21			
18	- 0,76	18,96									
Mar. 3	- 0,74	18,99									



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<b><math>\alpha^*</math> Libræ.</b>			<b><math>\delta</math> Ophiuchi.</b>			<b><math>\alpha</math> Ophiuchi <i>continued</i>.</b>			<b><math>\gamma</math> Aquilæ.</b>		
Apr. 23	-1,17	14.42.42,09	May 19	-1,40	16.6.35,62	Aug. 26	-1,37	17.28.3,86	Feb. 17	+1,60	19.39.13,32
26	-1,21	42,07	31	-1,52	35,71	27	-1,35	3,90	20	+1,54	13,43
27	-1,22	42,02	June 16	-1,59	35,67	Oct. 19	-0,44	4,00	June 26	-1,74	13,40
May 1	-1,26	42,04	July 6	-1,58	35,58	Nov. 19	-0,19	4,04	30	-1,80	13,42
3	-1,28	42,06	8	-1,57	35,73	27	-0,18	4,07	July 3	-1,85	13,48
4	-1,29	42,03	22	-1,48	35,71	Dec. 15	-0,31	4,11	5	-1,87	13,33
8	-1,32	42,04	Aug. 27	-1,02	35,66	17	-0,33	4,04	9	-1,93	13,44
11	-1,34	42,00	Sept. 14	-0,73	35,72	20	-0,37	4,04	19	-2,02	13,43
12	-1,35	42,03	Nov. 18	-0,29	35,72				23	-2,04	13,39
14	-1,36	42,06	Dec. 15	-0,66	35,72	<b><math>\mu^1</math> Sagittarii.</b>			26	-2,05	13,45
15	-1,37	42,11	<b>Antares.</b>			June 29	-2,01	18.4.54,80	30	-2,07	13,39
19	-1,38	42,08	Apr. 1	-0,54	16.20.20,65	July 5	-2,06	55,01	31	-2,07	13,44
June 4	-1,41	42,03	May 19	-1,58	20,39	15	-2,11	54,93	Aug. 7	-2,08	13,42
16	-1,39	42,07	June 4	-1,78	20,28	19	-2,12	55,00	23	-2,00	13,38
July 1	-1,30	42,01	16	-1,85	20,40	27	-2,10	54,92	26	-1,98	13,31
3	-1,29	41,98	30	-1,89	20,44	30	-2,10	54,89	27	-1,97	13,48
6	-1,26	42,05	July 7	-1,87	20,55	Aug. 2	-2,08	54,98	Sept. 2	-1,90	13,53
10	-1,23	42,03	22	-1,78	20,36	4	-2,07	54,89	3	-1,89	13,35
19	-1,14	42,03	27	-1,73	20,45	5	-2,06	55,10	16	-1,72	13,32
30	-1,01	41,97	30	-1,70	20,49	6	-2,06	54,88	17	-1,71	13,38
Aug. 2	-0,96	42,00	Aug. 2	-1,66	20,51	26	-1,85	54,96	21	-1,65	13,35
Dec. 8	-0,83	41,97	4	-1,64	20,50	27	-1,83	54,85	29	-1,51	13,38
<b><math>\alpha</math> Coronæ.</b>			Sept. 4	-1,14	20,57	31	-1,77	54,92	Oct. 1	-1,48	13,25
May 1	-1,33	15.28.25,28	<b><math>\alpha</math> Herculis.</b>			Sept. 3	-1,72	54,95	6	-1,39	13,30
3	-1,35	25,32	June 8	-1,63	17.7.54,16	<b><math>\beta</math> Lyræ.</b>			12	-1,28	13,38
4	-1,36	25,30	16	-1,69	54,03	June 26	-1,96	18.44.36,96	19	-1,17	13,49
5	-1,38	25,25	24	-1,73	54,16	July 2	-2,01	37,10	Nov. 27	-0,63	13,36
12	-1,44	25,37	July 1	-1,75	54,03	6	-2,03	36,88	Dec. 17	-0,54	13,41
15	-1,46	25,18	2	-1,75	54,02	9	-2,05	36,78	18	-0,54	13,39
31	-1,53	25,20	19	-1,70	53,95	19	-2,06	36,85	21	-0,55	13,45
June 16	-1,51	25,29	21	-1,68	54,15	23	-2,05	37,04	<b><math>\alpha</math> Aquilæ.</b>		
July 1	-1,42	25,41	26	-1,64	54,12	26	-2,04	37,02	Feb. 5	+1,84	19.43.33,80
14	-1,28	25,36	30	-1,61	54,08	28	-2,03	37,00	10	+1,76	33,73
27	-1,11	25,28	Aug. 6	-1,53	54,01	29	-2,03	37,05	17	+1,62	33,68
29	-1,08	25,35	9	-1,50	54,06	Aug. 30	-1,62	36,86	18	+1,60	33,75
Aug. 4	-0,98	25,38	10	-1,48	54,17	31	-1,60	36,89	19	+1,58	33,81
Nov. 26	+0,09	25,39	23	-1,30	54,02	Sept. 8	-1,45	36,91	20	+1,56	33,67
Dec. 8	-0,11	25,37	26	-1,25	53,98	16	-1,27	36,96	23	+1,49	33,78
14	-0,24	25,32	Dec. 15	-0,28	54,07	<b><math>\zeta</math> Aquilæ.</b>			June 26	-1,74	33,74
15	-0,26	25,29	<b><math>\alpha</math> Ophiuchi.</b>			June 29	-1,84	18.58.36,55	30	-1,80	33,82
17	-0,31	25,30	June 8	-1,63	17.28.3,95	July 1	-1,86	36,59	July 3	-1,85	33,80
<b><math>\alpha</math> Serpentis.</b>			24	-1,76	3,99	3	-1,88	36,42	5	-1,87	33,70
May 1	-1,19	15.36.58,88	29	-1,79	4,00	5	-1,90	36,51	9	-1,93	33,89
5	-1,25	58,91	30	-1,79	3,89	6	-1,91	36,52	19	-2,03	33,70
12	-1,33	58,82	July 1	-1,79	3,98	8	-1,93	36,42	23	-2,05	33,67
31	-1,46	58,95	2	-1,79	3,91	10	-1,94	36,41	26	-2,07	33,75
June 4	-1,48	58,80	22	-1,76	3,99	23	-1,99	36,56	28	-2,08	33,70
16	-1,49	58,90	23	-1,76	4,02	28	-2,00	36,48	29	-2,09	(33,45)
July 1	-1,45	58,78	29	-1,72	4,00	29	-2,00	36,47	30	-2,09	33,76
7	-1,42	58,78	30	-1,71	3,87	Aug. 30	-1,75	36,51	31	-2,09	33,66
14	-1,36	58,90	Aug. 2	-1,68	3,95	31	-1,74	36,50	Aug. 7	-2,10	33,72
27	-1,23	58,85	4	-1,66	4,01	Sept. 2	-1,71	36,49	13	-2,08	33,82
29	-1,21	58,87	5	-1,65	4,12	4	-1,68	36,51	23	-2,03	33,67
Aug. 2	-1,16	58,82	6	-1,64	4,01	16	-1,50	36,43	27	-2,01	33,65
4	-1,13	58,81	9	-1,61	3,97	21	-1,41	36,50	28	-2,00	33,70
Sept. 4	-0,67	58,82	10	-1,59	4,04	Oct. 1	-1,22	36,66	30	-1,98	33,66
Nov. 26	-0,29	58,91	23	-1,41	4,02				Sept. 2	-1,94	33,61
Dec. 1	-0,37	58,91							3	-1,93	33,72
8	-0,49	58,84							16	-1,77	33,70
15	-0,63	58,78							17	-1,76	33,83
17	-0,67	58,84							21	-1,70	33,68
									29	-1,57	33,81
									Oct. 1	-1,53	33,69
									6	-1,45	33,77



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1852.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>α Aquilæ continued.</i>			<i>β Aquilæ continued.</i>			<i>β Aquarii continued.</i>			<i>α Aquarii continued.</i>		
Oct. 12	-1,34	19.43.33,73	Oct. 1	-1,56	19.48.2,62	Aug. 30	-2,29	21.23.45,99	Oct. 11	-2,09	21.58.10,88
20	-1,21	(33,43)	6	-1,48	2,72	31	-2,29	45,91	Nov. 4	-1,79	10,85
Nov. 27	-0,70	33,65	12	-1,37	2,72	Sept. 8	-2,28	45,92	<i>α Pegasi.</i>		
Dec. 17	-0,61	33,78	18	-1,27	(2,32)	9	-2,27	45,89	Feb. 18	+1,77	22.57.23,65
18	-0,61	33,81	19	-1,26	2,65	10	-2,26	45,93	Apr. 12	+1,19	23,41
21	-0,62	33,73	20	-1,24	(2,31)	13	-2,25	45,89	13	+1,16	23,43
28	-0,63	33,72	Dec. 17	-0,64	2,67	16	-2,24	45,98	Aug. 7	-2,01	23,50
<i>β Aquilæ.</i>			21	-0,64	2,62	17	-2,23	46,08	13	-2,11	23,43
June 26	-1,71	19.48.2,67	<i>α² Capricorni.</i>			21	-2,19	45,94	26	-2,27	23,55
30	-1,78	2,66	June 30	-1,80	20.9.50,43	Oct. 6	-2,03	45,95	27	-2,28	23,45
July 3	-1,83	2,65	July 3	-1,86	50,57	12	-1,95	46,03	28	-2,29	23,44
9	-1,91	2,65	12	-2,01	50,56	18	-1,88	45,70	30	-2,30	23,48
19	-2,02	2,62	21	-2,13	50,56	23	-1,81	45,98	31	-2,31	23,56
23	-2,04	2,56	28	-2,19	50,50	<i>α Aquarii.</i>			Sept. 2	-2,32	23,48
26	-2,06	2,53	29	-2,20	50,60	July 23	-1,88	21.58.10,85	8	-2,35	23,49
28	-2,07	2,58	Aug. 28	-2,22	50,56	Aug. 9	-2,14	11,05	9	-2,36	23,49
29	-2,08	2,70	30	-2,20	50,57	23	-2,26	11,03	10	-2,36	23,47
31	-2,08	2,59	Sept. 2	-2,18	50,61	26	-2,28	10,97	13	-2,37	23,46
Aug. 7	-2,10	2,69	8	-2,13	50,58	30	-2,29	10,94	16	-2,38	23,56
10	-2,09	2,78	25	-1,92	50,43	31	-2,29	10,91	17	-2,38	23,69
13	-2,08	2,72	Oct. 1	-1,83	50,49	Sept. 2	-2,29	10,96	21	-2,38	23,56
23	-2,04	2,67	12	-1,65	50,40	3	-2,30	10,95	Oct. 7	-2,33	23,45
27	-2,02	2,62	19	-1,54	50,33	8	-2,30	10,85	11	-2,30	23,61
28	-2,01	2,59	<i>β Aquarii.</i>			9	-2,30	10,98	12	-2,29	23,46
30	-1,99	2,60	July 31	-2,10	21.23.46,05	10	-2,29	10,97	19	-2,24	23,48
Sept. 2	-1,96	2,71	Aug. 26	-2,29	46,07	13	-2,29	10,92	23	-2,20	23,51
3	-1,95	2,67	27	-2,29	46,10	16	-2,28	10,91	Nov. 18	-1,90	23,53
4	-1,94	2,57	28	-2,29	45,94	17	-2,28	10,99	27	-1,79	23,44
16	-1,78	2,63				Oct. 7	-2,13	10,89	Dec. 8	-1,65	23,61
17	-1,77	2,74							11	-1,62	23,53
25	-1,65	2,62							20	-1,51	23,59





MEAN RIGHT ASCENSIONS, JAN. 1, 1852,

OF STARS

OBSERVED IN THE YEAR 1852,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND

A CATALOGUE

OF

CONCLUDED MEAN RIGHT ASCENSIONS,

JANUARY 1, 1852;

WITH THE ANNUAL VARIATIONS.

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	o		h. m. s.	s.	
1	$\alpha$ ANDROMEDÆ.....					61.44	25	0. 0. 44.72	+ 3,073	
2	H. C. 130.....	Dec. 20	8.9	- 1.98		84.14	1	0. 6. 4.50	3,074	
3	H. C. 245.....	20	8 $\frac{1}{4}$	- 1.99		92.29	1	0. 9. 31.02	3,068	
4	B. (w.) o. 195.....	14	8.9	- 2.07		90.18	1	0. 11. 41.95	3,070	
5	B. (w.) o. 240.....	20	8.9	- 2.02		94.28	1	0. 13. 53.65	3,064	
6	B. (w.) o. 258.....	14	9	- 2.09		89. 0	1	0. 15. 5.51	3,072	
7	45 Piscium.....	14	7 $\frac{1}{4}$	- 2.12	4.34					
8		20	7.8	- 2.06	4.41	83. 8	2	0. 18. 4.38	3,083	
9	B. (w.) o. 355.....	14	9 $\frac{1}{4}$	- 2.13		88. 8	1	0. 21. 35.08	3,075	
10	B. (w.) o. 365.....	20		- 2.08		86.26	1	0. 22. 0.40	3,079	
11	B. (w.) o. 402.....	20	8 $\frac{3}{4}$	- 2.09		86.57	1	0. 24. 21.06	3,078	
12	B. (w.) o. 418.....	14	10	- 2.17		82.32	1	0. 24. 58.31	3,090	
13	B. (w.) o. 477.....	20	8	- 2.11		86.31	1	0. 27. 52.01	3,081	
14	B. (w.) o. 511.....	20	9.10	- 2.13		85.41	1	0. 30. 25.35	3,084	
15	B. (w.) o. 567.....	20	9	- 2.14		89.38	1	0. 33. 15.48	3,072	
16	$\beta$ CETI.....					108.48	10	0. 36. 9.59	2,999	
17	H. C. 1294.....	Jan. 7		+ 1.10		108.52	1	0. 40. 20.87	2,991	
18	POLARIS.....					1.29	38	1. 5. 36.68	17,686	
19	$\mu$ Piscium.....	Dec. 20		- 2.45		84.37	1	1. 22. 26.14	3,115	
20	$\alpha$ ARIETIS.....					67.14	7	1. 58. 50.40	3,340	
21	$\alpha$ CETI.....					86.30	10	2. 54. 32.90	3,127	
22	B. (w.) II. 1082....	Jan. 10	8	+ 0.29		77.43	1	3. 0. 54.41	3,277	
23	$\delta$ Arietis.....	30		+ 0.54		70.50	1	3. 3. 10.42	3,404	
24	H. C. 5967.....	10	8 $\frac{1}{4}$	+ 0.27		72.14	1	3. 5. 42.91	3,381	
25	B. (w.) III. 173....	10	8 $\frac{1}{4}$	+ 0.25		75.21	1	3. 10. 12.81	3,329	
26	$\xi$ Tauri.....	30		+ 0.44		80.47	1	3. 19. 9.39	3,236	
27	H. C. 6525.....	30	8	+ 0.42		73.54	1	3. 24. 37.22	3,371	
28	$\eta$ Tauri.....	30	7.8	+ 0.40		67.17	1	3. 23. 16.28	3,512	
29	B. (w.) III. 569....	30	7.8	+ 0.38		76.35	1	3. 31. 3.40	3,325	
30	B.A.C. 1186.....	30		+ 0.34		66.44	1	3. 40. 56.89	3,543	
31	B. (w.) III. 884....	30	9	+ 0.31		75.18	1	3. 45. 44.00	3,363	
32	B. (w.) III. 959....	30	8.9	+ 0.29		74.48	1	3. 49. 38.05	3,377	
33	H. C. 7434.....	Feb. 6	8	+ 0.38		67.59	1	3. 53. 31.59	3,531	
34	H. C. 7500.....	6	9	+ 0.36		64.58	1	3. 55. 59.72	3,606	
35	H. C. 7661.....	6	7	+ 0.34		66.31	1	4. 0. 0.39	3,574	
36	H. C. 7759.....	6	9.10	+ 0.33		65.33	1	4. 2. 56.77	3,601	
37	B. (w.) IV. 86.....	6	8	+ 0.30		75.49	1	4. 5. 12.08	3,367	
38	H. C. 7999.....	6	7 $\frac{3}{4}$	+ 0.29	26.05	67.33	2	4. 9. 26.06	3,560	
39		Dec. 30	8	- 3.55	26.07					
40	$\gamma$ Tauri.....	Jan. 30		+ 0.18	22.44	74.44	2	4. 11. 22.59	3,395	
41		Nov. 26		- 3.23	22.74					
42	H. C. 8122.....	Feb. 6	8	+ 0.27	50.77	72. 5	2	4. 12. 50.80	3,457	
43		Dec. 30	8	- 3.45	50.83					
44	$\delta^1$ Tauri.....	Jan. 30		+ 0.16		72.49	1	4. 14. 24.26	3,441	
45	$\delta^2$ Tauri.....	30		+ 0.16	34.17	72.54	2	4. 15. 34.20	3,440	
46		Nov. 26		- 3.27	34.22					
47	H. C. 8249.....	Feb. 6	7	+ 0.25	52.00	73.16	2	4. 15. 52.00	3,432	
48		Dec. 30	7	- 3.44	51.99					
49	B.A.C. 1373.....	Feb. 6	6.7	+ 0.24		68.43	1	4. 19. 13.93	3,542	
50	H. C. 8368.....	Dec. 30	9	- 3.62		66.13	1	4. 19. 24.99	3,604	
51	H. C. 8434.....	Feb. 3	8	+ 0.18		66.44	1	4. 21. 28.89	3,593	
52	B.A.C. 1388.....	Dec. 30	7.8	- 3.53		70.29	1	4. 21. 37.34	3,502	
53	H. C. 8541.....	Feb. 3	7.8	+ 0.17		70.58	1	4. 24. 22.44	3,492	
54	H. C. 8546.....	6	8	+ 0.21		66. 2	1	4. 24. 32.12	3,614	
55	ALDEBARAN.....					73.48	27	4. 27. 25.95	3,428	
56	H. C. 8654.....	6	7.8	+ 0.19		70.33	1	4. 27. 54.62	3,505	
57	$\sigma^1$ Tauri.....	6	5.6	+ 0.17		74.23	1	4. 30. 48.79	3,416	
58	$\tau$ Tauri.....	Nov. 26		- 3.40	22.05					
59		27		- 3.42	22.00	67.20	2	4. 33. 22.03	3,590	
60	H. C. 8826.....	Feb. 6	8	+ 0.16		74.19	1	4. 33. 42.52	3,420	
61	H. C. 8917.....	6	7.8	+ 0.14		64.14	1	4. 37. 6.59	3,674	
62	H. C. 8927.....	Nov. 18		- 3.19		71. 6	1	4. 37. 16.82	3,499	
63	H. C. 9008.....	Feb. 6	7.8	+ 0.13		68.57	1	4. 39. 56.53	3,554	
64	H. C. 9136.....	6	7	+ 0.11		66.56	1	4. 44. 38.58	3,610	
65	H. C. 9250.....	6	8 $\frac{1}{4}$	+ 0.08		62.51	1	4. 48. 26.72	3,723	
66	*.....	Nov. 3		- 3.02	10.72					
67		17		- 3.32	10.57	64. 9	3	4. 49. 10.65	+ 3,688	
68		18		- 3.34	10.65					
69	*.....	3		- 3.02	30.63					

No. 3. There is no following star. The R.A. of B. (w.) o. 161, which appears to be the same star, is about 9<sup>s</sup> greater.

No. 13. The same as H. C. 876. There is no star in the place of H. C. 867, which appears to be the same star as H. C. 876, with an error of 13<sup>s</sup> in R.A.

No. 17. The R.A. of H. C. is 0<sup>s</sup>.6 less. The star is Argelander z. 319, No. 53, the R.A. of which is 0<sup>h</sup>.40<sup>m</sup>.20<sup>s</sup>.51.

No. 27. The R.A. of H. C. is about 1<sup>s</sup> greater. The star is B. z. 337, 3<sup>h</sup>.22<sup>m</sup>.48<sup>s</sup>, which agrees in R.A. nearly with the Cambridge Observation.

No. 49. The N.P.D. of H. C. 8358, which is the same star, appears to be 1' too great.

No. 50. The R.A. of H. C. is about 0<sup>s</sup>.7 less.

No. 54. The R.A. of H. C. is about 0<sup>s</sup>.7 less. The N.P.D. of H. C. is 1' too great. No. 8547 is the same star.

Nos. 66—71. These two stars were observed at the request of Professor Chevallier of Durham, who had used them as comparison stars in observations of Hygiea.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
70	* .....	Nov. 17		- 3,33	30,40	63. 59	3	4. 50. 30,51	+ 3,693	
71	.....	18		- 3,35	30,51					
72	H. C. 9411.....	Feb. 6	7	+ 0,06		74. 29	1	4. 52. 52,73	3,426	
73	♄ Tauri.....	Nov. 26		- 3,37	15,29	68. 38	2	4. 54. 15,26	3,572	
74	.....	27		- 3,39	15,22					
75	H. C. 9517.....	Feb. 6	8	+ 0,05		71. 57	1	4. 56. 12,51	3,490	
76	B.A.C. 1577.....	6	7	+ 0,03		61. 56	1	4. 59. 17,67	3,759	
77	RIGEL.....					98. 23	17	5. 7. 25,70	2,879	
78	H. C. 9929.....	Jan. 17	8	- 0,21	12,52	64. 59	2	5. 11. 12,35	3,680	
79	.....	23	8.9	- 0,18	12,19					
80	H. C. 10007.....	17	8.9	- 0,24		61. 3	1	5. 13. 37,53	3,795	
81	H. C. 10080.....	23	8	- 0,18		70. 8	1	5. 15. 11,41	3,545	
82	♄ TAURI.....					61. 31	15	5. 16. 56,33	3,783	
83	H. C. 10156.....	Jan. 23	7 $\frac{3}{4}$	- 0,21		62. 31	1	5. 17. 44,36	3,754	
84	♄ Tauri.....	Nov. 27		- 3,38		68. 12	1	5. 18. 44,88	3,597	
85	H. C. 10304.....	Jan. 23	8	- 0,23		62. 21	1	5. 22. 4,71	3,762	
86	♄ Tauri.....	Nov. 27		- 3,35		68. 57	1	5. 28. 48,08	3,580	
87	128 Tauri.....	Mar. 2	6.7	+ 0,23		73. 59	1	5. 36. 21,93	3,452	
88	H. C. 10889.....	Feb. 10	8	- 0,10		68. 11	1	5. 38. 16,44	3,603	
89	H. C. 10917.....	Mar. 2	7	+ 0,23		62. 41	1	5. 39. 32,40	3,758	No. 89. The R.A. of H. C. is 30" less. A Circle transit of this star on Feb. 8, 1851, gave the same difference.
90	H. C. 11036.....	Feb. 10	8.9	- 0,13	55,02	64. 49	2	5. 41. 54,92	3,697	
91	.....	Mar. 2	8.9	+ 0,22	54,82					
92	H. C. 11081.....	Feb. 10	8 $\frac{1}{4}$	- 0,13		64. 45	1	5. 43. 29,84	3,700	
93	B.A.C. 1867.....	Mar. 2	6.7	+ 0,19		69. 44	1	5. 44. 31,41	3,563	
94	H. C. 11152.....	Feb. 10	7	- 0,15		62. 19	1	5. 46. 21,78	3,771	
95	♄ ORIONIS.....					82. 38	16	5. 47. 9,63	3,243	
96	H. C. 11251.....	Feb. 10	8	- 0,15		68. 31	1	5. 49. 36,38	3,596	
97	H. C. 11363.....	10		- 0,16		73. 1	1	5. 52. 30,69	3,479	
98	H. C. 11384.....	10	7 $\frac{1}{4}$	- 0,17		73. 4	1	5. 53. 4,82	3,478	
99	H. C. 11539.....	10	8	- 0,19		71. 27	1	5. 57. 47,04	3,519	
100	H. C. 12158.....	Mar. 5	10	+ 0,09		66. 51	1	6. 14. 32,96	3,641	
101	H. C. 12291.....	5	9	+ 0,06	18,81					
102	.....	12	8	+ 0,20	18,76	72. 28	2	6. 18. 18,79	3,492	
103	H. C. 12454.....	5	7.8	+ 0,04	46,92	72. 29	2	6. 22. 46,98	3,491	
104	.....	12	7 $\frac{3}{4}$	+ 0,16	47,03					
105	H. C. 12557.....	5	8 $\frac{1}{4}$	+ 0,03		65. 15	1	6. 25. 58,01	3,683	
106	H. C. 12716.....	5	7	+ 0,01		65. 17	1	6. 30. 26,84	3,681	No. 106. H. C. 12715 has the same N.P.D. and appears to be the same star, although its R.A. is less by 1'.5.
107	H. C. 12875.....	12	8	+ 0,10		71. 54	1	6. 34. 30,71	3,503	
108	SIRIUS.....					106. 31	22	6. 38. 37,65	2,680	
109	H. C. 13065.....	12	8	+ 0,07		69. 16	1	6. 40. 9,18	3,569	
110	H. C. 13194.....	Jan. 29	8	- 0,45	46,06	64. 4	2	6. 43. 45,94	3,709	
111	.....	Mar. 12	7 $\frac{3}{4}$	+ 0,05	45,81					
112	37 Geminorum....	Jan. 29	6.7	- 0,45	12,40	64. 26	2	6. 46. 12,33	3,697	
113	.....	Mar. 12	6	+ 0,04	12,25					
114	H. C. 13422.....	12	8 $\frac{3}{4}$	+ 0,02		68. 42	1	6. 49. 18,22	3,580	
115	B.A.C. 2280.....	Jan. 29	7.8	- 0,45		73. 51	1	6. 51. 20,55	3,448	
116	H. C. 13527.....	Mar. 8	8	- 0,07	14,11	70. 53	2	6. 52. 14,05	3,522	
117	.....	12	7.8	0,00	13,99					
118	H. C. 13531.....	8	8	- 0,07	21,50	70. 55	2	6. 52. 21,34	3,521	No. 118 and 119. The R.A. is 1' greater than that of H. C., but agrees with the R.A. of B. z. 336, 6 <sup>b</sup> . 50 <sup>m</sup> . 30 <sup>s</sup> , which is the same star.
119	.....	12	7.8	0,00	21,18					
120	* .....	16	8	+ 0,07		63. 6	1	6. 54. 8,08	3,730	No. 120. The place agrees with that of H. C. 13564 if this star was observed at the first and second wires. There is no star in the place of H. C.
121	H. C. 13681.....	8	7.8	- 0,09	53,86	61. 35	3	6. 56. 53,28	3,772	No. 121—123. The R.A. of H. C. is 0 <sup>s</sup> .9 less.
122	.....	12	7 $\frac{3}{4}$	- 0,02	53,10					
123	.....	16	7	+ 0,05	53,37					
124	H. C. 13792.....	8	7 $\frac{1}{2}$	- 0,11	29,98	64. 2	2	7. 0. 29,99	3,699	No. 124—127. The R.A. in H. C. of each of these stars is 30" too small.
125	.....	16	7	+ 0,03	30,00					
126	H. C. 13797.....	8	8	- 0,11	37,61	64. 2	2	7. 0. 37,53	3,699	
127	.....	16	7 $\frac{1}{2}$	+ 0,03	37,45					
128	H. C. 13931.....	8	8 $\frac{1}{4}$	- 0,13		61. 58	1	7. 3. 51,87	3,755	
129	H. C. 13937.....	16		+ 0,01		68. 24	1	7. 3. 57,57	3,579	
130	51 Geminorum....	Feb. 3		- 0,47	52,25	73. 36	2	7. 4. 52,33	3,449	
131	.....	Mar. 2		- 0,22	52,41					
132	53 Geminorum....	8	6	- 0,14		61. 51	1	7. 6. 42,11	3,756	
133	H. C. 14108.....	Feb. 3	8	- 0,48	32,67	69. 0	2	7. 8. 32,65	3,561	
134	.....	Mar. 2	7 $\frac{3}{4}$	- 0,24	32,63					
135	H. C. 14113.....	16	8	- 0,02		73. 27	1	7. 8. 39,46	3,450	
136	H. C. 14177.....	8		- 0,16		67. 42	1	7. 10. 32,97	3,593	
137	♄ Geminorum <i>nf</i> ...	Feb. 3		- 0,49	16,92	67. 45	2	7. 11. 16,84	+ 3,591	
138	.....	Mar. 2		- 0,25	16,75					

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
139	H. C. 14242 .....	Mar. 16	7	-0,03		63.34	1	7.12.26,00	+3,702	
140	H. C. 14321 .....	2	8 $\frac{1}{4}$	-0,27	37,77					
141	.....	8	8	-0,18	37,77	69.1	3	7.14.37,79	3,556	
142	.....	16	8	-0,05	37,84					
143	H. C. 14393 .....	Feb. 3	8	-0,50	50,72					
144	.....	Mar. 2	8	-0,27	50,78	69.13	2	7.16.50,75	3,550	
145	H. C. 14495 .....	Feb. 3	9	-0,51	59,08					
146	.....	Mar. 8	8 $\frac{1}{2}$	-0,21	59,10	66.53	3	7.19.59,04	3,607	
147	.....	20	8	-0,01	58,95					
148	H. C. 14515 .....	10	7	-0,17		74.35	1	7.20.22,32	3,417	
149	*.....	8	8	-0,21		66.55	1	7.20.25,40	3,606	No. 149. This star is B. z. 339, 7 <sup>h</sup> . 18 <sup>m</sup> . 31 <sup>s</sup> , the place of which accords with that of H. C. 14509 if the N.P.D. of the latter be 1° too small. See the note in p. 101 of Volume XVIII.
150	H. C. 14556 .....	2	7	-0,30	41,14	69.53	2	7.21.41,18	3,530	
151	.....	23	7	+0,03	41,22					
152	H. C. 14554 .....	20	7.8	-0,02		66.44	1	7.21.43,08	3,609	
153	H. C. 14597 .....	16	7.8	-0,09		62.34	1	7.23.3,87	3,720	
154	H. C. 14637 .....	Feb. 3		-0,52		68.17	1	7.23.47,40	3,568	
155	CASTOR.....					57.48	19	7.25.8,99	3,855	
156	H. C. 14794 .....	Mar. 10	9	-0,21		69.11	1	7.28.10,99	3,542	
157	H. C. 14792 .....	8	8 $\frac{1}{4}$	-0,24	3,37					
158	.....	20	8 $\frac{1}{4}$	-0,06	3,24	73.36	3	7.28.3,26	3,435	
159	.....	23	8.9	0,00	3,18					
160	B.A.C. 2514.....	2	6	-0,34	15,12					
161	.....	4	7	-0,31	14,99	65.27	3	7.30.15,16	3,635	
162	.....	13	7.8	-0,18	15,36					
163	PROCYON .....					84.24	24	7.31.33,24	3,191	
164	*.....	2	8 $\frac{1}{4}$	-0,35		71.36	1	7.33.8,41	3,479	No. 164. This is B. z. 281, 7 <sup>h</sup> . 31 <sup>m</sup> . 29 <sup>s</sup> .
165	*.....	4	9	-0,32		71.38	1	7.33.55,77	3,478	No. 165. The same as B. z. 281, 7 <sup>h</sup> . 32 <sup>m</sup> . 17 <sup>s</sup> .
166	*.....	13	8 $\frac{1}{4}$	-0,20		71.40	1	7.34.42,55	3,476	No. 166. The same as B. z. 281, 7 <sup>h</sup> . 34 <sup>m</sup> . 43 <sup>s</sup> . The R.A. of H. C. 14969, which has the same N.P.D., is 40 <sup>s</sup> less.
167	κ Geminorum.....	Jan. 7		-0,35	65.15		1	7.35.30,48	3,634	
168	POLLUX.....				61.37		25	7.36.15,14	3,730	
169	H. C. 15112.....	Mar. 4	8 $\frac{1}{4}$	-0,35		66.29	1	7.38.39,62	3,599	
170	82 Geminorum.....	Feb. 11	7	-0,54	42,47					
171	.....	28	7	-0,41	42,36	66.30	2	7.39.42,42	3,598	
172	H. C. 15155 f.....	Mar. 10	7 $\frac{3}{4}$	-0,27	48,21	71.18	2	7.39.48,16	3,481	No. 172 and 173. This is Σ 1140.
173	.....	13	7 $\frac{3}{4}$	-0,22	48,10					
174	H. C. 15231 .....	Feb. 11	8 $\frac{1}{2}$	-0,56	10,22					
175	.....	28	8	-0,44	10,13					
176	.....	Mar. 4	8 $\frac{1}{2}$	-0,38	9,94	63.16	6	7.42.10,12	3,678	
177	.....	10	8 $\frac{1}{2}$	-0,29	10,23					
178	.....	13	8	-0,25	10,09					
179	.....	20	8	-0,13	10,10					
180	φ Geminorum.....	Feb. 3		-0,58	25,94	62.51	2	7.44.25,99	3,686	
181	.....	4		-0,58	26,04					
182	H. C. 15325 .....	28	7	-0,45	40,77					
183	.....	Mar. 10	8	-0,30	40,83	63.3	3	7.44.40,80	3,681	
184	.....	20	7.8	-0,14	40,81					
185	H. C. 15398 .....	Feb. 11	7 $\frac{1}{4}$	-0,55	23,42					
186	.....	Mar. 4	8	-0,38	23,28	71.39	3	7.46.23,40	3,467	
187	.....	13	7 $\frac{1}{2}$	-0,26	23,50					
188	H. C. 15528 .....	Feb. 11	8	-0,56	11,84					
189	.....	28	8	-0,45	11,77	68.27	2	7.50.11,81	3,539	
190	H. C. 15547 .....	Mar. 10	7	-0,32	50,51					
191	.....	13	7 $\frac{3}{4}$	-0,28	50,42	68.44	3	7.50.50,48	3,531	
192	.....	20	7.8	-0,17	50,51					
193	ω <sup>1</sup> Cancri .....	22	7	-0,15		64.12	1	7.51.58,08	3,641	
194	B. (w.) VII. 1576...	13	8	-0,29	16,93	75.33	2	7.53.16,86	3,374	
195	.....	20	8	-0,19	16,78					
196	7 Cancri. ....	Feb. 28	7	-0,47	5,87					
197	.....	Mar. 4		-0,42	(5,46)					No. 197. This observation is not included in obtaining the mean, being too discordant.
198	.....	10	6.7	-0,34	5,95	67.31	3	7.55.5,88	3,556	
199	.....	22	7.8	-0,16	5,83					
200	B. (w.) VII. 1654...	13	8 $\frac{1}{4}$	-0,30	12,60	75.49	2	7.56.12,62	3,366	
201	.....	20	7.8	-0,20	12,64					
202	H. C. 15834 .....	Feb. 28	8	-0,48	37,07	74.25	2	7.58.37,10	3,395	No. 202 and 203. The R.A. of H. C. is about 1 <sup>s</sup> less.
203	.....	Mar. 22	7.8	-0,18	37,12					
204	B. (w.) VII. 1732...	20	8	-0,21		75.15	1	7.58.48,39	3,376	No. 204. Bessel's R.A. is about 0,7 greater.
205	H. C. 15938 .....	22	7.8	-0,20		75.3	1	8.1.48,24	3,378	
206	H. C. 15954 .....	Feb. 28	9	-0,50	14,12					
207	.....	Mar. 20	8 $\frac{1}{4}$	-0,23	14,28	68.47	2	8.2.14,20	+3,518	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
208	H. C. 16066 .....	Mar. 22	8	-0.22		69.53	1	8.5.28.14	+3,489	No. 209. The star is B. z. 273, 8 <sup>h</sup> . 5 <sup>m</sup> . 0 <sup>s</sup> , with which it agrees in R.A. That of H. C. is 1 <sup>s</sup> less. No. 212. It is here assumed that the correction for error of counting should have been -11 <sup>s</sup> instead of -9 <sup>s</sup> , to make the R.A. agree with that obtained by two observations in 1851.
209	H. C. 16110 .....	20	6.7	-0.25		73.28	1	8.6.36.13	3,408	
210	H. C. 16149 .....	22	7.4	-0.23		68.19	1	8.8.5.74	3,521	
211	H. C. 16266 .....	20	6.7	-0.27		73.25	1	8.10.45.77	3,406	
212	H. C. 16332 .....	22	8	-0.26		66.35	1	8.13.6.40	3,555	
213	H. C. 16380 .....	20	7.3	-0.29		71.54	1	8.14.20.79	3,435	
214	H. C. 16388 .....	20	7.3	-0.29		71.52	1	8.14.32.50	3,435	
215	H. C. 16554 .....	20	8	-0.32		66.22	1	8.18.41.59	3,552	
216	B. (w.) VIII. 586...	20	8.9	-0.33		75.8	1	8.22.34.09	3,359	
217	H. C. 16797 .....	22	7	-0.31		75.57	1	8.25.23.12	3,340	
218	H. C. 16915 .....	22	9	-0.33		72.9	1	8.28.37.46	3,414	No. 219. The observation agrees with one in 1851. Bessel's R.A. is 0 <sup>s</sup> .8 greater.
219	B. (w.) VIII. 811...	22	8	-0.34		76.28	1	8.31.5.97	3,325	
220	ε Cancri .....	Apr. 3	7	-0.16		69.56	1	8.31.57.25	3,456	
221	B.A.C. 2931. ....	Mar. 22	6.7	-0.35		69.36	1	8.33.19.55	3,461	
222	B. (w.) VIII. 936...	Apr. 3	8.9	-0.19		75.51	1	8.35.40.73	3,333	
223	δ Cancri .....	Feb. 4		-0.61	16.17					
224	—	5		-0.62	16.07					
225	—	Mar. 2		-0.58	16.16	71.18	4	8.36.16.14	3,422	
226	—	3		-0.57	16.16					
227	H. C. 17225 .....	22	7	-0.37		70.39	1	8.37.3.65	3,434	No. 232. Bessel's R.A. is 0 <sup>s</sup> .7 greater.
228	ε HYDRÆ .....					83.2	18	8.38.56.15	3,196	
229	54 Cancri .....			-0.39	46.57					
230	—	Apr. 3	7.8	-0.22	46.55	74.6	2	8.42.46.56	3,359	
231	H. C. 17513 .....	3	9	-0.24		67.8	1	8.45.27.74	3,494	
232	B. (w.) VIII. 1210..	Mar. 22	9	-0.41		75.53	1	8.46.35.79	3,322	
233	α Cancri .....	2		-0.62	23.38					
234	—	3		-0.61	25.40	77.34	2	8.50.23.39	3,288	
235	B. (w.) IX. 233....	Apr. 12	9.4	-0.24		78.33	1	9.11.37.41	3,252	
236	H. C. 18457 .....	12	8	-0.26		73.35	1	9.14.34.31	3,331	No. 235. The annual variation in Weisse's Catalogue should be 3,256 instead of 3,293. The declination is verified by the Cambridge Observation of April 2, 1850.
237	B. (w.) IX. 350....	1	9	-0.42		78.25	1	9.16.44.43	3,250	
238	B. (w.) IX. 359....	12	8.9	-0.27		75.10	1	9.17.14.43	3,302	
239	α HYDRÆ .....					98.1	17	9.20.18.95	2,950	
240	B. (w.) IX. 493....	Mar. 12	8.4	-0.64	4.28					
241	—	Apr. 1	8.9	-0.45	4.19	79.12	3	9.23.4.24	3,232	
242	—	12	8.9	-0.30	4.26					
243	λ Leonis .....	Feb. 5		-0.63		66.23	1	9.23.16.02	3,440	
244	ξ Leonis .....	Mar. 3		-0.69	57.88					
245	—	4		-0.69	57.96	78.3	2	9.23.57.92	3,249	
246	B. (w.) IX. 533....	23	9	-0.55		77.37	1	9.24.37.81	3,255	
247	B. (w.) IX. 564....	Apr. 12	9	-0.32		78.53	1	9.25.43.55	3,234	
248	H. C. 18861 .....	Mar. 23	8.4	-0.58		70.25	1	9.28.9.96	3,363	
249	B. (w.) IX. 657....	Apr. 12	9.4	-0.34		80.40	1	9.29.42.20	3,205	
250	B. (w.) IX. 692....	Mar. 23	8.9	-0.58		80.52	1	9.31.15.69	3,201	
251	B. (w.) IX. 717....	Apr. 12	8.4	-0.35		79.54	1	9.32.36.77	3,213	
252	ο Leonis .....	Mar. 3		-0.71	14.76					
253	—	4		-0.71	14.96	79.26	2	9.33.14.86	3,220	
254	B. (w.) IX. 782....	23	8.9	-0.60	38.63					
255	—	Apr. 12	8.9	-0.36	38.63	75.36	2	9.35.38.63	3,273	
256	H. C. 19191 .....	Mar. 23	7	-0.61		80.45	1	9.39.25.24	3,196	
257	B. (w.) IX. 929....	23	8.4	-0.62	47.96					
258	—	Apr. 12		-0.40	48.01	75.11	2	9.42.47.99	3,270	
259	B. (w.) IX. 985....	12	8.4	-0.41		78.8	1	9.45.24.43	3,226	
260	H. C. 19442 .....	2	8	-0.55		74.34	1	9.48.34.47	3,271	
261	ν Leonis .....	27		-0.24		76.51	1	9.50.15.46	3,238	
262	B. (w.) IX. 1118....	2	7.8	-0.56		84.4	1	9.51.58.19	3,144	
263	H. C. 19589 .....	13	9.4	-0.44	8.63					
264	—	20		-0.35	8.59	76.23	2	9.54.8.61	3,240	
265	H. C. 19617 .....	Mar. 22	8.3	-0.67		82.10	1	9.55.7.96	3,166	
266	B. (w.) IX. 1221...	Apr. 2	9	-0.58	30.11					
267	—	12	8.9	-0.47	30.23	80.29	2	9.56.30.17	3,186	
268	B. (w.) IX. 1231...	20		-0.37		78.40	1	9.56.59.77	3,208	
269	B. (w.) IX. 1243....	Mar. 22	9.4	-0.68	41.17					
270	—	Apr. 13	9.2	-0.46	41.16	76.19	2	9.57.41.17	3,236	
271	η Leonis .....	27		-0.29		72.31	1	9.59.15.47	3,282	
272	REGULUS .....					77.19	29	10.0.29.13	3,221	
273	B. (w.) X. 37 .....	Mar. 23	8	-0.69		84.1	1	10.3.22.76	3,139	
274	B. (w.) X. 110 .....	3	8	-0.76		83.31	1	10.6.59.10	3,143	
275	37 Leonis .....	4		-0.77	43.82					
276	—	5	7	-0.77	43.76	75.32	2	10.8.43.79	+3,232	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
277	B. (w.) x. 161.....	Mar. 3	9	-0.76	0.32					
278	—	Apr. 20		-0.44	0.41	81.45	2	10.10.03.37	+3,160	
279	B. (w.) x. 169.....	Mar. 3	8	-0.76		81.45	1	10.10.23.86	3,160	
280	$\gamma$ Leonis <i>np</i> .....	Feb. 6		-0.58	48.30					
281	—	Apr. 1		-0.67	48.35	69.25	2	10.11.48.33	3,299	
282	H. C. 20080.....	Mar. 3	8½	-0.77	37.20					
283	—	Apr. 20	8.9	-0.45	37.26	78.11	2	10.13.37.23	3,196	
284	42 Leonis.....	Mar. 4		-0.78	52.53					
285	—	5	6.7	-0.78	52.40	74.17	2	10.13.52.47	3,239	
286	B. (w.) x. 285.....	Apr. 20	8	-0.47		76.31	1	10.17.5.21	3,246	
287	H. C. 20183.....	Mar. 3	7.8	-0.77		78.6	1	10.17.6.48	3,193	
288	B. (w.) x. 297.....	3	7.8	-0.77		78.6	1	10.17.35.15	3,192	
289	B. (w.) x. 354.....	3	8	-0.77	9.14					
290	—	Apr. 20	8.9	-0.49	9.44	80.56	2	10.20.9.29	3,161	
291	B. (w.) x. 411.....	27	7.8	-0.42		83.54	1	10.23.18.72	3,129	
292	B. (w.) x. 422.....	Mar. 3	7.8	-0.78	9.52					
293	—	Apr. 20	8	-0.51	9.67	84.18	2	10.24.9.60	3,125	
294	B. (w.) x. 474.....	Mar. 3	8	-0.78	1.59					
295	—	Apr. 20	8.9	-0.52	1.67	77.7	3	10.27.1.62	3,191	
296	—	27	9	-0.44	1.60					
297	B. (w.) x. 552.....	27	7.8	-0.46		83.19	1	10.30.45.09	3,130	
298	B. (w.) x. 576.....	20	9.10	-0.55		86.44	1	10.32.17.22	3,099	
299	B. (w.) x. 603.....	27	8.9	-0.47		76.21	1	10.33.50.86	3,190	
300	B. (w.) x. 658.....	20	9	-0.57		85.11	1	10.36.53.90	3,111	
301	B. (w.) x. 661.....	27	9	-0.49		83.11	1	10.37.5.75	3,127	
302	B. (w.) x. 718.....	20	9	-0.58		80.23	1	10.40.27.67	3,148	
303	B. (w.) x. 776.....	20	9	-0.59		83.38	1	10.43.12.31	3,120	
304	B. (w.) x. 846.....	20	8¾	-0.61		86.33	1	10.46.13.99	3,096	
305	B. (w.) x. 910.....	20	9.10	-0.63		86.38	1	10.50.11.78	3,094	
306	B. (w.) x. 938.....	May 3		-0.50		84.51	1	10.51.55.60	3,106	
307	B. (w.) x. 964.....	Apr. 20	8.9	-0.64		83.52	1	10.53.23.64	3,112	
308	$\chi$ Leonis.....	1		-0.79	22.90					
309	—	2		-0.79	22.87	81.52	3	10.57.22.90	3,122	
310	—	May 3	4	-0.53	22.94					
311	B. (w.) x. 1075.....	3	7.8	-0.54		78.59	1	10.59.29.41	3,139	
312	B. (w.) x. 11. 18.....	3	8.9	-0.57		91.1	1	11.2.29.07	3,065	
313	$\delta$ LEONIS.....					68.40	15	11.6.13.87	3,192	
314	B. (w.) x. 11. 149.....	3	9	-0.59		82.31	1	11.9.30.34	3,109	
315	B.A.C. 3871.....	3	6.7	-0.62		82.36	1	11.15.36.27	3,104	
316	$\epsilon$ Leonis.....	Apr. 1		-0.84	12.43					
317	—	2		-0.84	12.51	78.39	2	11.16.12.47	3,122	
318	$\epsilon$ Leonis.....	12	4.5	-0.82		92.11	1	11.22.45.26	3,062	
319	B. (w.) x. 11. 568.....	26	9	-0.77		92.30	1	11.32.43.88	3,064	
320	B. (w.) x. 11. 632.....	26	9	-0.77		81.30	1	11.36.4.15	3,092	
321	$\nu$ Virginis.....	Mar. 5		-0.78		82.38	1	11.38.15.01	3,087	
322	B. (w.) x. 11. 679.....	Apr. 26	9¼	-0.78		84.22	1	11.38.44.70	3,083	
323	$\beta$ LEONIS.....					74.36	24	11.41.30.46	3,100	
324	B. (w.) x. 11. 787.....	26	9	-0.81		84.29	1	11.45.43.22	3,079	
325	B. (w.) x. 11. 836.....	26	8.9	-0.82		85.7	1	11.48.54.93	3,076	
326	B. (w.) x. 11. 895.....	26	7¼	-0.84		91.6	1	11.51.59.89	3,070	
327	$\pi$ Virginis.....	Mar. 5		-0.76	17.28					
328	—	6		-0.77	17.32	82.34	2	11.53.17.30	3,076	
329	B. (w.) x. 11. 944.....	Apr. 27		-0.84		81.6	1	11.55.0.26	3,075	
330	B. (w.) x. 11. 959.....	26	8¼	-0.85		91.37	1	11.55.57.47	3,070	
331	$\sigma$ Virginis.....	June 24		-0.32		80.27	1	11.57.40.11	3,073	
332	B. (w.) x. 11. 998.....	Apr. 26	8.9	-0.86		91.38	1	11.58.20.32	3,069	
333	B. (w.) x. 11. 121.....	May 14	8¾	-0.80		96.38	1	12.8.29.88	3,076	
334	B. (w.) x. 11. 178.....	14	8¼	-0.81		92.30	1	12.11.38.64	3,074	
335	$\eta$ Virginis.....	1		-0.88		89.51	1	12.12.20.04	3,070	
336	B. (w.) x. 11. 249.....	14	8.9	-0.83		94.58	1	12.15.19.95	3,078	
337	B.A.C. 4225.....	15	6	-0.86		94.14	1	12.24.2.30	3,081	
338	$\beta$ CORVI.....					112.35	19	12.26.37.44	3,135	
339	B. (w.) x. 11. 490.....	15	7	-0.88		91.30	1	12.29.29.59	3,075	
340	B. (w.) x. 11. 563.....	15	8	-0.90		93.11	1	12.33.48.83	3,082	
341	$\gamma$ Virginis.....	1		-0.96		90.38	1	12.34.9.86	3,073	
342	B. (w.) x. 11. 621.....	15	9	-0.94		100.30	1	12.36.43.09	3,110	
343	B. (w.) x. 11. 677.....	15	9	-0.93		95.5	1	12.39.54.07	3,091	
344	B. (w.) x. 11. 730.....	15	9	-0.95		96.37	1	12.42.50.98	3,099	
345	B. (w.) x. 11. 772.....	19	9	-0.93		93.19	1	12.45.21.19	+3,086	

No. 291. II. C. 20376 is the same star with N.P.D. 5' too small.

No. 292 and 293. This star is II C. 20399. Bessel's R.A. is less by 5'.

No. 296. The state of the sky was unfavourable for estimation of magnitude.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
346	H. C. 24624.....	May 19	8	-1.03		94.47	1	13. 8. 59.81	+ 3,104	
347	B. (w.) XIII. 206...	19	8.9	-1.07		99.25	1	13. 12. 42.16	3,140	
348	B. (w.) XIII. 243...	Apr. 17	8.9	-1.10		102.25	1	13. 14. 56.10	3,165	
349	B. (w.) XIII. 245...	May 19	9.10	-1.06		95.16	1	13. 15. 3.85	3,110	
350	SPICA.....					100.23	19	13. 17. 24.17	3,152	
351	B. (w.) XIII. 322...	Apr. 19	9½	-1.11		102.48	1	13. 20. 9.44	3,175	
352	B. (w.) XIII. 391...	19	8.9	-1.10	1.62					
353		May 19	8	-1.11	1.59	99.30	2	13. 24. 1.61	3,151	
354	B. (w.) XIII. 440...	19	8	-1.14		102.36	1	13. 26. 35.96	3,181	
355	B. (w.) XIII. 444...	Apr. 19	8.9	-1.12		102.40	1	13. 26. 39.12	3,182	
356	H. C. 25180.....	May 19	8.9	-1.13		98.20	1	13. 30. 33.05	3,146	
357	B. (w.) XIII. 572...	19	9¼	-1.15		100.33	1	13. 33. 21.58	3,169	No. 357. Bessel's R.A. is about 0.6 greater.
358	B. (w.) XIII. 620...	19		-1.14		94.51	1	13. 35. 57.79	3,117	
359	B. (w.) XIII. 674...	19	9¼	-1.19		102.10	1	13. 39. 28.85	3,192	No. 358. Too much clouded for estimation of magnitude.
360	B. (w.) XIII. 752...	19	9	-1.17		96.31	1	13. 43. 43.51	3,137	
361	B. (w.) XIII. 789...	19	8.9	-1.17		95.3	1	13. 46. 26.94	3,124	
362	B. (w.) XIII. 870...	19	8.9	-1.19		96.9	1	13. 50. 38.02	3,138	
363	B. (w.) XIII. 916...	19	8.9	-1.23		101.13	1	13. 53. 17.12	3,196	
364	H. C. 25979.....	Apr. 19	8.9	-1.16		106.19	1	14. 3. 8.70	3,271	
365	H. C. 26054.....	19	8.9	-1.16		106.46	1	14. 6. 4.66	3,281	
366	ARCTURUS.....					70.3	32	14. 8. 54.71	2,812	
367	B. (w.) XIV. 241...	June 4	10	-1.29		103.3	1	14. 13. 54.13	3,242	No. 367. Magnitude estimated in too much day-light.
368	B. (w.) XIV. 520...	May 14	9	-1.31		101.51	1	14. 28. 36.47	3,240	
369	B. (w.) XIV. 577...	14	9	-1.33		103.27	1	14. 31. 34.73	3,267	
370	H. C. 26746.....	14	8.9	-1.40		110.33	1	14. 34. 11.93	3,383	
371	ε BOOTIS.....					62.18	19	14. 38. 31.34	2,623	
372	α² LIBRÆ.....					105.25	22	14. 42. 42.03	3,311	
373	B. (w.) XIV. 891...	May 15		-1.37		104.44	1	14. 47. 22.20	3,305	
374	ξ² Libræ.....	3		-1.26		100.49	1	14. 48. 44.57	3,242	
375	17 Libræ.....	15	8.9	-1.34		100.33	1	14. 50. 12.65	3,239	
376	B.A.C. 4984.....	June 16	8	-1.55		113.25	1	15. 1. 14.00	3,482	
377	H. C. 27717.....	16	9	-1.50		106.58	1	15. 5. 50.63	3,366	
378	H. C. 27825.....	16	8½	-1.55		110.10	1	15. 9. 20.96	3,432	
379	7 Serpenteis.....	May 12		-1.33		76.54	1	15. 15. 22.89	2,836	
380	H. C. 28075.....	June 16		-1.54		106.34	1	15. 17. 5.12	3,372	
381	τ¹ Serpenteis.....	May 12		-1.35		74.3	1	15. 18. 55.76	2,779	
382	B.A.C. 5105.....	June 16	7	-1.64		113.23	1	15. 23. 32.13	3,519	
383	τ² Serpenteis.....	May 12		-1.35		73.26	1	15. 25. 20.52	2,760	
384	α CORONÆ.....					62.47	18	15. 28. 25.31	2,528	
385	H. C. 28453.....	June 4	7½	-1.57		107.10	1	15. 30. 17.08	3,399	
386	H. C. 28560.....	May 1	9	-1.31		112.34	1	15. 33. 22.01	3,516	
387	η Libræ.....	3		-1.27	45.34					
388		4		-1.29	45.29	105.12	2	15. 35. 45.32	3,364	
389	α SERPENTIS.....					83.6	19	15. 36. 58.85	2,939	
390	H. C. 28813.....	June 16	8	-1.69		112.10	1	15. 42. 23.19	3,520	
391	θ Libræ.....	May 3		-1.27	24.40					
392		4		-1.28	24.48	106.17	2	15. 45. 24.44	3,396	
393	H. C. 28901.....	June 4	8	-1.62		108.30	1	15. 45. 24.94	3,443	
394	H. C. 29038.....	16	7½	-1.70		110.35	1	15. 50. 21.18	3,495	
395	H. C. 29136.....	16	7.8	-1.76		114.36	1	15. 53. 58.61	3,593	
396	β Scorpii.....	May 31		-1.62		109.24	1	15. 56. 50.42	3,475	
397	H. C. 29306.....	June 16	7.8	-1.69		107.32	1	15. 58. 45.07	3,435	
398	H. C. 29460.....	16	9.10	-1.77		112.51	1	16. 3. 17.01	3,561	
399	B.A.C. 5383.....	May 19	6.7	-1.50		109.4	1	16. 3. 23.09	3,474	No. 398. For the N.P.D. of this star see the Circle observation of June 17, 1851.
400	ν Scorpii.....	31		-1.63		109.4	1	16. 3. 24.02	3,474	
401	δ OPHIUCHI.....					93.19	10	16. 6. 35.68	3,139	No. 399. The R.A. of B.A.C. is too great. See the note in p. 354 of Vol. xviii.
402	H. C. 29677.....	19	8	-1.48		107.1	1	16. 9. 57.35	3,434	
403	H. C. 29740.....	19	8.9	-1.50		109.35	1	16. 12. 30.93	3,495	
404	ψ Ophiuchi.....	19	4.5	-1.50		109.41	1	16. 15. 26.95	3,500	
405	ANTARES.....					116.6	12	16. 20. 20.47	3,665	
406	η Ophiuchi.....	July 26		-1.81	53.78					
407		27		-1.80	53.70	105.32	3	17. 1. 53.72	3,430	
408		Aug. 23		-1.49	53.69					
409	H. C. 31195.....	July 19	7.8	-1.98		114.50	1	17. 2. 16.90	3,670	
410	α HERCULIS.....					75.26	15	17. 7. 54.07	2,732	
411	ν Serpenteis.....	26		-1.83	30.45					
412		27		-1.82	30.30	102.41	2	17. 12. 30.38	3,365	
413	H. C. 31488.....	May 19	8.9	-1.47		112.46	1	17. 12. 34.97	3,620	
414	θ Ophiuchi.....	June 30		-2.02		114.51	1	17. 12. 55.47	+ 3,677	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	o		h. m. s.	s.	
415	H. C. 31649. ....	July 19	8	-1,96		109.36	1	17.16.44,91	+3,538	
416	H. C. 31733. ....	19	7.8	-1,98		110.50	1	17.19.26,81	3,571	
417	c <sup>o</sup> Ophiuchi. ....	19	4	-2,04		113.51	1	17.22.23,43	3,654	
418	52 Ophiuchi. ....	19	7½	-2,02		111.56	1	17.26.24,50	3,603	
419	α OPHIUCHI. ....					77.20	25	17.28.3,99	2,773	
420	H. C. 32045. ....	19	9.10	-2,08		114.52	1	17.28.48,76	3,685	
421	58 Ophiuchi. ....	June 30		-2,00		111.36	1	17.34.33,96	3,597	
422	H. C. 32271. ....	July 19	9	-1,99		107.26	1	17.34.42,56	3,488	
423	H. C. 32369. ....	19	9	-2,05		111.32	1	17.37.18,47	3,596	
424	H. C. 32706. ....	19	8.9	-2,03		108.16	1	17.46.25,95	3,511	
425	7 Sagittarii. ....	19	6	-2,15		114.17	1	17.53.47,09	3,674	
426	9 Sagittarii. ....	22	6.7	-2,15		114.21	1	17.54.48,14	3,676	
427	H. C. 33180. ....	22	9.10	-2,18	58,72					
428	—	Aug. 2	9	-2,14	58,86	115.22	2	17.58.58,79	3,705	Nos. 427 and 428. The R.A. of H. C. is about 0 <sup>s</sup> .9 less.
429	B.A.C. 6158. ....	2	7.8	-2,06		109.52	1	18.2.28,64	3,554	
430	H. C. 33427. ....	July 22	8.9	-2,23		117.32	1	18.4.53,08	3,767	
431	μ <sup>1</sup> Sagittarii. ....					111.6	14	18.4.54,93	3,586	
432	B.A.C. 6220. ....	19	7.8	-2,27		118.30	1	18.12.38,36	3,795	
433	H. C. 33974. ....	19	8.9	-2,10		107.44	1	18.18.2,38	3,497	
434	λ Sagittarii. ....	27		-2,23		115.30	1	18.18.50,30	3,706	No. 433. This R.A. agrees with that obtained on Sept. 7, 1850. The R.A. of H. C. is nearly 1 <sup>s</sup> less.
435	H. C. 34627. ....	Aug. 27	7.8	-2,02		114.6	1	18.33.55,89	3,662	
436	H. C. 34749. ....	Sept. 8	7	-1,78		107.42	1	18.37.0,60	3,492	
437	H. C. 34884. ....	8	6.7	-1,81		108.46	1	18.40.5,16	3,518	
438	B.A.C. 6400. ....	July 19	8	-2,22	15,15					
439	—	23	8	-2,23	15,45	113.1	2	18.41.15,30	3,629	
440	β LYRÆ. ....					56.48	13	18.44.36,95	2,212	
441	B.A.C. 6450. ....	23	8.9	-2,25		113.20	1	18.47.36,72	3,635	
442	ξ <sup>2</sup> Sagittarii. ....	Sept. 21		-1,67		111.18	1	18.48.53,93	3,580	
443	B.A.C. 6467. ....	July 29	7.8	-2,22		110.37	1	18.49.24,19	3,562	
444	B.A.C. 6485. ....	23	7	-2,25	42,51					
445	—	29	7½	-2,26	42,60	112.54	3	18.52.42,50	3,621	
446	—	Aug. 31	7	-2,04	42,39					
447	ο Sagittarii. ....	June 30		-2,03	48,94					
448	—	July 1		-2,05	48,94					
449	—	23	3.4	-2,24	48,80	111.57	5	18.55.48,92	3,594	
450	—	29		-2,25	48,96					
451	—	Aug. 31	4	-2,04	48,94					
452	ζ AQUILÆ. ....					76.21	17	18.58.36,50	2,757	
453	π Sagittarii. ....	June 30		-2,02	57,72					
454	—	July 29		-2,25	57,78					
455	—	Aug. 25		-2,12	57,79	111.15	4	19.0.57,68	3,572	
456	—	Oct. 18		-1,26	57,44					
457	H. C. 35843. ....	July 23	9	-2,29		114.25	1	19.1.59,46	3,656	
458	H. C. 36136. ....	Aug. 26	9.10	-2,15		112.3	1	19.7.45,77	3,589	
459	B.A.C. 6607. ....	Oct. 1		-1,64		112.40	1	19.11.45,97	3,602	
460	ρ <sup>1</sup> Sagittarii. ....	Aug. 26	3.4	-2,12		108.7	1	19.13.5,29	3,486	
461	H. C. 36426. ....	30	8	-2,09		109.18	1	19.13.56,47	3,515	
462	H. C. 36520. ....	26	9	-2,14		109.13	1	19.15.50,77	3,511	
463	δ Aquilæ. ....	Oct. 1		-1,43		87.11	1	19.18.2,23	3,009	No. 462. The R.A. of H. C. is 1 <sup>s</sup> less.
464	H. C. 36666. ....	Aug. 30	7	-2,11		108.39	1	19.19.3,54	3,495	
465	H. C. 36678. ....	26	8¾	-2,18		110.49	1	19.19.21,50	3,549	
466	B.A.C. 6671. ....	Sept. 25		-1,79		111.37	1	19.22.6,89	3,567	
467	H. C. 36828. ....	Aug. 26	7¾	-2,13	18,36					
468	—	30	8	-2,09	18,21	106.28	2	19.22.18,29	3,441	
469	H. C. 36976. ....	26	8½	-2,14		106.37	1	19.25.45,38	3,442	
470	H. C. 36981. ....	30	7	-2,11		106.41	1	19.25.50,05	3,444	
471	B.A.C. 6700. ....	Sept. 25		-1,80		111.6	1	19.26.50,35	3,550	
472	h <sup>2</sup> Sagittarii. ....	Aug. 26		-2,28	42,11					
473	—	Sept. 21		-1,93	41,78	115.12	2	19.27.41,95	3,654	Nos. 472 and 473. The observation of Aug. 26 is the more discordant.
474	53 Sagittarii. ....	Aug. 30	6.7	-2,23		113.46	1	19.30.55,76	3,614	
475	B.A.C. 6727. ....	Oct. 1		-1,76		113.46	1	19.31.13,14	3,613	
476	e <sup>1</sup> Sagittarii. ....	Aug. 27	6.7	-2,16	14,68					
477	—	Sept. 25		-1,78	14,65	106.38	2	19.32.14,67	3,438	
478	B.A.C. 6733. ....	July 29	8	-2,36		115.12	1	19.33.23,55	3,648	
479	e <sup>2</sup> Sagittarii. ....	Aug. 26		-2,17	3,17					
480	—	Sept. 21		-1,85	3,09	106.28	2	19.34.3,13	3,433	No. 478. The star is H. C. 37319, with which it agrees in R.A. nearly. H. C. 37316 has less R.A. by 1 <sup>s</sup> .6, but is most probably the same star.
481	H. C. 37439. ....	Aug. 30	8.9	-2,32		117.44	1	19.36.6,51	3,713	
482	H. C. 37568. ....	30	9	-2,30		116.15	1	19.39.5,81	3,665	
483	γ AQUILÆ. ....					79.45	30	19.39.13,40	+2,851	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
484	$\alpha$ AQUILÆ.....					81.31	38	19.43.33,73	+2,891	
485	$\beta$ AQUILÆ.....					83.58	29	19.48.2,65	2,945	
486	B.A.C. 6864.....	Sept. 25		-1,96		113.8	1	19.52.36,05	3,574	
487	B.A.C. 6878.....	2	7.8	-2,27		113.0	1	19.54.57,97	3,568	
488	H. C. 38250.....	July 3	8.9	-2,00	41,23					
489	—	28	8.9	-2,32	41,16	112.36	2	19.55.41,20	3,558	
490	B.A.C. 6888.....	30	7.8	-2,41		117.14	1	19.56.10,03	3,672	
491	B.A.C. 6889.....	Oct. 1		-1,86		111.44	1	19.56.15,39	3,536	
492	65 Sagittarii.....	Sept. 25		-1,86		103.5	1	19.57.12,48	3,342	
493	H. C. 38339.....	2	9	-2,22		109.7	1	19.57.29,70	3,474	
494	H. C. 38357.....	17	9	-2,09		112.5	1	19.57.51,79	3,543	No. 494. The R.A. of H. C. is about 0 <sup>s</sup> .7 greater.
495	H. C. 38434.....	July 29	8 $\frac{1}{4}$	-2,35	47,10	114.1	2	19.59.47,06	3,582	
496	—	30	8	-2,36	47,02					
497	H. C. 38503.....	28	9	-2,27	10,48					
498	—	Sept. 2	8.9	-2,23	10,69	108.47	2	20.1.10,59	3,463	
499	H. C. 38517.....	Aug. 30	8	-2,36		115.21	1	20.1.33,46	3,617	
500	B.A.C. 6923.....	Sept. 25		-1,96		109.49	1	20.1.50,72	3,486	
501	*.....	July 29	9	-2,35		113.53	1	20.3.52,40	3,578	No. 501. Argelander z. 240, No. 81, observed for H. C. 38654, in the place of which no star was seen.
502	H. C. 38705.....	Aug. 30		-2,25	33,26					
503	—	Sept. 2	8.9	-2,22	33,29					
504	—	8	8.9	-2,17	33,16	107.7	4	20.5.33,28	3,422	
505	—	17	8.9	-2,06	33,40					
506	H. C. 38839... ..	17	7 $\frac{3}{4}$	-2,13		111.46	1	20.8.26,56	3,523	
507	$\alpha^2$ CAPRICORNI.....					103.0	14	20.9.50,51	3,331	
508	B.A.C. 6987.....	17	7.8	-2,12		110.6	1	20.11.54,52	3,481	
509	$\beta$ Capricorni.....	July 29		-2,23	41,71					
510	—	30		-2,24	41,63	105.15	4	20.12.41,64	3,376	
511	—	Sept. 22		-2,00	41,71					
512	—	Oct. 19		-1,58	41,51					
513	B. (w.) xx. 346....	July 3	9	-1,87	17,92	105.4	2	20.14.17,93	3,370	
514	—	Sept. 17	9	-2,07	17,93					
515	H. C. 39125.....	8	9	-2,19		106.16	1	20.14.50,66	3,395	
516	H. C. 39249.....	17	8.9	-2,13		108.51	1	20.17.54,74	3,447	
517	$\pi$ Capricorni.....	July 29		-2,27	50,91					
518	—	30		-2,28	50,78	108.42	3	20.18.50,82	3,443	
519	—	Sept. 8	6.7	-2,23	50,78					
520	B.A.C. 7049.....	Aug. 26		-2,39		112.53	1	20.20.50,14	3,532	
521	B.A.C. 7069.....	July 21	7	-2,23	33,57					
522	—	Sept. 8	8 $\frac{3}{4}$	-2,31	33,44	112.39	2	20.23.33,51	3,523	
523	B. (w.) xx. 612....	Oct. 7	9	-1,82		104.3	1	20.24.35,58	3,341	
524	B. (w.) xx. 648....	Sept. 8	9	-2,20		103.54	1	20.25.59,61	3,337	
525	B.A.C. 7115.....	8	7.8	-2,25		107.38	1	20.29.25,59	3,408	
526	$\nu$ Capricorni.....	Oct. 19		-1,71	37,23					
527	—	20		-1,70	37,01	108.39	2	20.31.37,12	3,427	
528	B.A.C. 7151.....	Sept. 8	8	-2,27		107.54	1	20.32.55,79	3,410	
529	10 Delphini.....	Oct. 1		-1,75		75.56	1	20.34.20,56	2,809	
530	B. (w.) xx. 932....	Sept. 8	9	-2,25		105.30	1	20.36.29,15	3,358	
531	17 Capricorni.....	July 30		-2,31		112.3	1	20.37.34,97	3,489	
532	52 Cygni.....	Oct. 1		-1,71		59.49	1	20.39.33,25	2,474	
533	B. (w.) xx. 1051...	Sept. 8	8 $\frac{3}{4}$	-2,26		105.27	1	20.40.53,46	3,353	
534	H. C. 40256.....	8	8	-2,39		111.47	1	20.43.49,11	3,474	
535	B. (w.) xx. 1203...	8	9 $\frac{1}{4}$	-2,26		103.49	1	20.47.13,16	3,316	No. 535. The R.A. agrees with that obtained in 1850. Bessel's is about 0 <sup>s</sup> .7 less.
536	H. C. 40386.....	Oct. 20	8	-1,78		109.9	1	20.47.19,69	3,417	
537	B. (w.) xx. 1305...	20	10	-1,73		102.4	1	20.50.56,31	3,281	
538	21 Capricorni.....	Sept. 25		-2,16		108.6	1	20.52.31,73	3,390	No. 537. Apparently a faint star. Bessel's R.A. is about 0 <sup>s</sup> .7 greater.
539	H. C. 40684.....	Oct. 20	8	-1,83		109.50	1	20.54.19,93	3,420	
540	$\eta$ Capricorni.....	Aug. 26		-2,42	58,91					
541	—	27		-2,41	58,81	110.26	3	20.55.58,71	3,429	
542	—	Oct. 20		-1,84	58,42					
543	26 Capricorni.....	6	7.8	-2,08		110.47	1	21.0.49,28	3,428	
544	B.A.C. 7352.....	Sept. 9	7	-2,31		105.5	1	21.3.30,49	3,321	
545	H. C. 41070.....	20	8	-2,22		105.10	1	21.3.55,26	3,322	
546	H. C. 41200.....	9	8.9	-2,33	58,66					
547	—	20	8 $\frac{1}{4}$	-2,24	58,68	105.44	3	21.6.58,62	3,329	
548	—	Oct. 6	8 $\frac{1}{2}$	-2,05	58,53					
549	29 Capricorni.....	July 30		-2,20	33,18					
550	—	Aug. 26		-2,37	33,25	105.47	3	21.7.33,24	3,329	
551	—	27		-2,37	33,28					
552	B.A.C. 7392.....	Oct. 6	7 $\frac{1}{2}$	-2,12		110.57	1	21.10.2,25	+3,416	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
553	B. (w.) XXI. 222 ...	Aug. 27	8	-2,34	26,00	102.53	2	21.10.25,92	+3,277	N <sup>o</sup> . 553 and 554. H. C. 41343 has less R.A. by 2", but agrees in N.P.D. with Bessel's place. There are not two stars: see the note to the observation of Aug. 27.
554	—	Sept. 9	8.9	-2,30	25,83					
555	B. (w.) XXI. 248 ...	20	8 $\frac{3}{4}$	-2,23		102.58	1	21.11.26,71	3,277	
556	Capricorni.....	July 30		-2,21		107.28	1	21.14.0,11	3,349	
557	B. (w.) XXI. 346 ...	Sept. 9	9	-2,30		101.13	1	21.15.11,34	3,245	
558	B. (w.) XXI. 357 ...	20	9 $\frac{1}{4}$	-2,22		101.20	1	21.15.44,89	3,247	
559	B. (w.) XXI. 378 ...	10	8.9	-2,30		101.35	1	21.16.36,17	3,250	
560	B. (w.) XXI. 418 ...	Aug. 27	7.8	-2,35	22,48					
561	—	Sept. 20	7	-2,24	22,53	102.43	2	21.18.22,51	3,266	
562	B. (w.) XXI. 422 ...	9	8.9	-2,31		101.33	1	21.18.26,89	3,248	
563	B. (w.) XXI. 458 ...	Oct. 6	8 $\frac{1}{4}$	-2,09		104.20	1	21.19.54,78	3,290	N <sup>o</sup> . 571. The R.A. exceeds by 1".29, the mean from two observations in 1849, which agree well enough with Bessel and H. C.
564	B. (w.) XXI. 475 ...	Sept. 10	8.9	-2,33		103.14	1	21.20.39,50	3,272	
565	B. (w.) XXI. 493 ...	20	9	-2,24		100.55	1	21.21.19,43	3,235	
566	H. C. 41760 .....	9	8	-2,35	33,78					
567	—	21	7 $\frac{1}{4}$	-2,27	33,75	104.40	2	21.21.33,77	3,294	
568	$\beta$ AQUARIUS .....					96.13	18	21.23.45,95	3,162	
569	B. (w.) XXI. 638 ...	10	9 $\frac{1}{4}$	-2,30	3,32					
570	—	21	9	-2,23	3,28	99.30	2	21.27.3,30	3,209	
571	B. (w.) XXI. 655 ...	9	9	-2,34		102.27	1	21.27.(34,53)	3,253	
572	B. (w.) XXI. 695 ...	20	8	-2,52	20,34					
573	—	21	7.8	-2,26	20,53	102.7	2	21.29.20,44	3,246	N <sup>o</sup> . 571. The R.A. exceeds by 1".29, the mean from two observations in 1849, which agree well enough with Bessel and H. C.
574	B. (w.) XXI. 719 ...	9	9	-2,32		99.55	1	21.30.27,35	3,213	
575	B. (w.) XXI. 774 ...	21	9	-2,30		105.3	1	21.32.31,04	3,286	
576	B. (w.) XXI. 835 ...	9	8 $\frac{3}{4}$	-2,35		102.40	1	21.34.43,03	3,249	
577	B. (w.) XXI. 861 ...	21	8 $\frac{3}{4}$	-2,28		101.49	1	21.35.36,12	3,235	
578	H. C. 42429 .....	21	8 $\frac{1}{4}$	-2,26		99.7	1	21.38.49,26	3,195	
579	B. (w.) XXI. 940 ...	Oct. 12	8 $\frac{1}{2}$	-2,05		98.41	1	21.38.52,74	3,189	
580	H. C. 42467 .....	Sept. 9	8.9	-2,34		100.33	1	21.40.1,09	3,213	
581	B. (w.) XXI. 1025 ..	21	8	-2,27	12,30					
582	—	Oct. 12	7.8	-2,07	12,06	98.36	2	21.43.12,18	3,184	
583	B. (w.) XXI. 1038 ..	18	9	-2,04		104.37	1	21.43.49,50	3,266	N <sup>o</sup> . 619. The seconds of mean R.A. 1852,0 of this star, as deduced from observations at different epochs are as follows:  By H. C. in 1795 ..... 39,71 Bessel in 1823 ..... 40,85 Argelander in 1830 pr. ✕ 40,50 Camb. Obs. 1851 pr. ✕ 41,00 Camb. Obs. 1852 fol. ✕ 41,18  The star appears, therefore, to have proper motion. (See Argelander's Catalogue of 560 stars, p. 83).
584	$\mu$ Capricorni.....	July 31		-2,12	13,59					
585	—	Aug. 27		-2,38	13,58					
586	—	28		-2,38	13,39	104.15	4	21.45.13,51	3,259	
587	—	Nov. 17		-1,63	13,48					
588	B. (w.) XXI. 1106 ..	Sept. 21	8	-2,32		102.40	1	21.47.3,75	3,235	
589	B. (w.) XXI. 1137 ..	Oct. 12	8 $\frac{1}{2}$	-2,10	31,73					
590	—	18	8	-2,03	31,48	100.17	2	21.48.31,61	3,202	
591	B.A.C. 7640.....	Aug. 27	7.8	-2,40		105.49	1	21.49.44,17	3,275	
592	H. C. 42841 .....	Oct. 12	8 $\frac{1}{2}$	-2,16		105.47	1	21.51.15,37	3,272	N <sup>o</sup> . 619. The seconds of mean R.A. 1852,0 of this star, as deduced from observations at different epochs are as follows:  By H. C. in 1795 ..... 39,71 Bessel in 1823 ..... 40,85 Argelander in 1830 pr. ✕ 40,50 Camb. Obs. 1851 pr. ✕ 41,00 Camb. Obs. 1852 fol. ✕ 41,18  The star appears, therefore, to have proper motion. (See Argelander's Catalogue of 560 stars, p. 83).
593	B. (w.) XXI. 1228 ..	Aug. 27	9.10	-2,33		98.6	1	21.52.32,07	3,171	
594	B. (w.) XXI. 1246 ..	Sept. 21	8.9	-2,33		102.3	1	21.53.16,34	3,220	
595	B. (w.) XXI. 1249 ..	Oct. 18	7	-2,09		105.2	1	21.53.25,51	3,259	
596	B. (w.) XXI. 1279 ..	Aug. 27	8	-2,34		99.13	1	21.55.10,63	3,183	
597	30 Aquarii.....	Sept. 21	7	-2,29		97.14	1	21.55.29,31	3,158	
598	$\alpha$ AQUARIUS .....					91.2	17	21.58.10,94	3,083	
599	Aquarii.....	Aug. 27		-2,38	26,71					
600	—	28		-2,39	26,59	104.35	2	21.58.26,65	3,247	
601	B. (w.) XXII. 15....	Sept. 2	8.9	-2,41		105.17	1	22.1.45,20	3,251	N <sup>o</sup> . 619. The seconds of mean R.A. 1852,0 of this star, as deduced from observations at different epochs are as follows:  By H. C. in 1795 ..... 39,71 Bessel in 1823 ..... 40,85 Argelander in 1830 pr. ✕ 40,50 Camb. Obs. 1851 pr. ✕ 41,00 Camb. Obs. 1852 fol. ✕ 41,18  The star appears, therefore, to have proper motion. (See Argelander's Catalogue of 560 stars, p. 83).
602	B. (w.) XXII. 91 ...	2	7	-2,40		104.36	1	22.5.8,10	3,238	
603	H. C. 43611 .....	Oct. 18	9	-2,14		100.21	1	22.14.2,87	3,180	
604	B.A.C. 7804.....	Aug. 26		-2,32	46,45					
605	—	27		-2,33	46,36	97.56	3	22.15.46,36	3,152	
606	—	Sept. 1		-2,35	46,26					
607	B. (w.) XXII. 343 ..	Oct. 18	7.8	-2,18		103.56	1	22.16.38,14	3,215	
608	B. (w.) XXII. 417 ..	18	9	-2,14		96.47	1	22.19.37,69	3,138	
609	B. (w.) XXII. 444 ..	Aug. 30	8.9	-2,38		102.59	1	22.20.54,55	3,200	
610	$\sigma$ Aquarii.....	Sept. 2	5	-2,38		101.26	1	22.22.48,80	3,182	N <sup>o</sup> . 619. The seconds of mean R.A. 1852,0 of this star, as deduced from observations at different epochs are as follows:  By H. C. in 1795 ..... 39,71 Bessel in 1823 ..... 40,85 Argelander in 1830 pr. ✕ 40,50 Camb. Obs. 1851 pr. ✕ 41,00 Camb. Obs. 1852 fol. ✕ 41,18  The star appears, therefore, to have proper motion. (See Argelander's Catalogue of 560 stars, p. 83).
611	H. C. 43946 .....	Oct. 18	7 $\frac{1}{2}$	-2,21		105.19	1	22.23.1,42	3,221	
612	B. (w.) XXII. 493 ..	Aug. 27		-2,32		97.19	1	22.23.32,70	3,141	
613	B. (w.) XXII. 519 ..	30	7.8	-2,34		97.14	1	22.24.47,17	3,139	
614	B. (w.) XXII. 548 ..	Sept. 2	8	-2,34		95.39	1	22.26.12,59	3,123	
615	B. (w.) XXII. 547 ..	Oct. 18	8 $\frac{3}{4}$	-2,21		102.55	1	22.26.12,85	3,377	
616	B. (w.) XXII. 589 ..	Aug. 30	8	-2,34		98.6	1	22.28.7,27	3,145	
617	B. (w.) XXII. 617 ..	Sept. 2	7.8	-2,39	14,98					
618	—	Oct. 18	7	-2,22	14,75	102.30	2	22.29.14,87	3,185	
619	B.A.C. 7892 sf. ....	Aug. 30	8.9	-2,38		103.23	1	22.31.41,18	3,190	The star appears, therefore, to have proper motion. (See Argelander's Catalogue of 560 stars, p. 83).
620	B. (w.) XXII. 694 ..	Oct. 11	9	-2,26	33,01					
621	—	18	8 $\frac{1}{2}$	-2,20	32,69	97.34	3	22.32.32,81	+3,137	
622	—	19	10	-2,19	32,73					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1852, as observed.	Approximate N.P.D. Jan. 1, 1852.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1852.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
623	B. (w.) xxii. 748...	Aug. 30	8 $\frac{1}{4}$	-2,37	9,94	103. 6	2	22. 35. 9,92	+ 3,183	No. 632. The R.A. of B. (w.) xxii. 887 is 30° less. See note in p. 223 of Vol. xviii.
624		Oct. 19	9 $\frac{1}{4}$	-2,23	9,90					
625	B. (w.) xxii. 752...	Sept. 2	8 $\frac{1}{4}$	-2,37		99. 55	1	22. 35. 13,71	3,155	
626	B.A.C. 7920. ....	Oct. 18	7 $\frac{3}{4}$	-2,21		97. 59	1	22. 35. 28,64	3,138	
627	B. (w.) xxii. 776..	11	9.10	-2,29		99. 50	1	22. 36. 29,42	3,153	
628	B. (w.) xxii. 814..	Sept. 2	8.9	-2,38		102. 19	1	22. 38. 18,61	3,172	
629	B. (w.) xxii. 822..	Aug. 30	8.9	-2,33	7,33	96. 43	2	22. 39. 7,30	3,125	
630		Oct. 19	10	-2,21	7,27					
631	B. (w.) xxii. 852..	11	9.10	-2,30		99. 9	1	22. 40. 19,08	3,144	
632	H. C. 44661. ....	Sept. 2	8	-2,40		104. 50	1	22. 42. 33,35	3,188	
633	B. (w.) xxii. 902..	Aug. 27	9 $\frac{1}{2}$	-2,31		98. 44	1	22. 42. 55,79	3,138	No. 640. See the note to this observation. No. 1076 of Weisse's Catalogue appears to be the same star with an error of 19° in R.A.
634	72 Aquarii. ....	30	7	-2,33		98. 6	1	22. 43. 3,47	3,133	
635	B. (w.) xxii. 957..	27	9	-2,30		96. 8	1	22. 45. 44,70	3,116	
636	B. (w.) xxii. 1007..	Oct. 19	10	-2,27		101. 51	1	22. 48. 18,82	3,157	
637	B. (w.) xxii. 1036..	11	8	-2,30	47,36					
638		12	8	-2,29	47,10	93. 57	2	22. 49. 47,23	3,098	
639	B. (w.) xxii. 1068..	Sept. 8	7 $\frac{3}{4}$	-2,39	16,50	99. 0	2	22. 51. 16,49	3,133	
640		Oct. 19		-2,27	16,47					
641	B. (w.) xxii. 1101..	Aug. 27	9 $\frac{1}{4}$	-2,28		92. 59	1	22. 51. 39,61	3,091	
642	B. (w.) xxii. 1109..	Oct. 11	8.9	-2,32	58,22	95. 21	2	22. 52. 58,16	3,107	
643		12	9	-2,31	58,10					No. 655. The R.A. agrees with that given by the observation on Nov. 24, 1849. Bessel's is about 0°.7 greater.
644	B. (w.) xxii. 1120..	Aug. 30	7.8	-2,34		100. 21	1	22. 53. 23,90	3,141	
645	B. (w.) xxii. 1136..	Sept. 8	7.8	-2,38		97. 45	1	22. 54. 4,21	3,122	
646	$\alpha$ PEGASI. ....					75. 35	28	22. 57. 23,51	2,978	
647	B. (w.) xxii. 1269..	8	7.8	-2,35		91. 6	1	23. 0. 10,42	3,077	
648	B. (w.) xxiii. 38..	Oct. 19	9.10	-2,27		90. 23	1	23. 3. 15,93	3,073	
649	$\phi$ Aquarii. ....	Aug. 30		-2,30	39,44	96. 51	2	23. 6. 39,40	3,108	
650		Oct. 23		-2,28	39,36					
651	B. (w.) xxiii. 158..	Nov. 27	9 $\frac{3}{4}$	-1,91		91. 32	1	23. 8. 57,42	3,079	
652	$\psi^3$ Aquarii. ....	Aug. 30		-2,31	15,83					
653		Oct. 23	6	-2,31	15,56	100. 25	3	23. 11. 15,73	3,122	No. 663. Bad atmospheric circumstances for estimation of magnitude.
654		Nov. 20		-2,02	15,79					
655	B. (w.) xxiii. 239..	27	9	-1,94		100. 29	1	23. 11. 57,55	3,122	
656	B. (w.) xxiii. 303..	27	8 $\frac{3}{4}$	-1,94		92. 17	1	23. 15. 7,71	3,081	
657	B. (w.) xxiii. 381..	27	8.9	-1,98		101. 51	1	23. 19. 4,30	3,121	
658	11 Piscium. ....	27	7 $\frac{1}{4}$	-1,98		92. 36	1	23. 21. 51,27	3,081	
659	B. (w.) xxiii. 550..	27	8 $\frac{3}{4}$	-2,00		91. 9	1	23. 26. 53,76	3,075	
660	H. C. 46253. ....	27	8.9	-2,02		93. 47	1	23. 29. 8,24	3,083	
661	B. (w.) xxiii. 678..	27	9.10	-2,04		92. 11	1	23. 32. 55,21	3,077	
662	B. (w.) xxiii. 748..	27	8 $\frac{1}{4}$	-2,05		88. 41	1	23. 36. 35,07	3,068	
663	B. (w.) xxiii. 770..	4	10.11	-2,29		91. 48	1	23. 37. 41,62	3,075	
664	27 Piscium. ....	Dec. 17		-1,92	5,78	94. 23	2	23. 51. 5,83	3,075	
665		18		-1,91	5,87					
666	30 Piscium. ....	Aug. 30		-2,21		96. 50	1	23. 54. 22,32	3,075	
667	33 Piscium. ....	30		-2,21		96. 32	1	23. 57. 45,62	+ 3,072	





APPARENT NORTH POLAR DISTANCES

OBSERVED WITH THE

MURAL CIRCLE

IN THE YEAR 1852.

Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.	
		A	B	C	D	E	F						Int.	Ext.						
		"	"	"	"	"	"				"	"	r.	o	'	"	Inch.	o		o
Jan. 3	(a) Zenith Point ....										66.25.10,47									B.
	⊙ S.L.....	4.24,0	19,4	29,0	22,1	21,0	23,3	+9,9	11,699		141.43.49,15	29,653	41,6	38,7	222,12	113.9.28,80			T.	
	⊙ N.L.....	1.59,4	55,0	61,0	55,9	54,2	57,1		11,699		141.11.22,34				214,10	112.36.53,97			T.	
	⊙ S.L.....	3.37,4	34,6	40,7	36,4	32,9	33,2		8,300	+2	102.44.17,63	29,462	42,5	43,5	42,77	74.6.57,93			T.	
Jan. 6	(b) ⊙ N.L.....	2.15,9	13,3	18,4	15,6	12,5	15,5		9,480		140.52.26,79	29,780	39,2	40,6	209,72	112.17.54,45			B.	
	⊙ S.L.....	4.40,5	37,1	44,9	40,0	37,1	39,5		9,480		141.24.52,24				217,42	112.50.27,60			B.	
Jan. 7	⊙ S.L.....	2.30,8	29,6	32,4	30,2	29,6	30,0		9,325		141.17.45,35	29,554	43,6	45,7	211,76	112.43.15,05			B.	
	⊙ N.L.....	0.14	3,2	2,0	2,5	0,0	2,0		9,325		140.45.15,93				204,31	112.10.38,18			B.	
Jan. 10	⊙ N.L.....	1.37,3	35,4	39,4	37,2	33,9	37,5		11,821	+2	140.20.59,31	29,642	37,3	35,9	203,82	111.46.21,05			B.	
	⊙ S.L.....	4.36	2,1	8,4	5,9	0,0	3,6		11,821	+4	140.53.26,77				211,08	112.18.55,79			B.	
Jan. 17	⊙ S.L.....	2.29,5	28,7	30,8	28,8	25,5	28,2		11,153		139.42.5,36	30,000	45,4	45,5	194,06	111.7.17,36			B.	
Jan. 20	Zenith Point ....	0.12,7	8,3	12,3	8,5	5,1	11,3	+10,1	9,985		66.25.10,06								B.	
Jan. 22	⊙ N.L.....	2.23,4	22,8	26,6	23,8	20,4	23,3	+9,9	11,765		138.6.47,38	29,190	44,8	44,4	172,20	109.31.37,52			B.	
	(c) ⊙ S.L.....	4.51,5	54,4	52,0	51,5	49,6	52,4		11,765		138.39.15,05				177,70	110.4.10,69			B.	
Jan. 28	(c) ⊙ N.L.....	4.35,0	33,4	36,1	32,2	31,7	36,0	+10,3	11,112		136.39.10,73	29,750	42,1	42,5	162,48	108.3.51,86			T.	
	⊙ S.L.....	1.58,9	56,2	61,2	57,0	56,0	58,1		11,112		137.11.35,38				167,32	108.36.21,35			T.	
	Zenith Point....	0.19,4	16,1	20,0	15,6	12,2	18,7		10,372		66.25.9,35								T.	
Jan. 29	⊙ S.L.....	0.24,7	24,4	26,6	22,7	19,9	24,3		8,981		136.55.45,15	29,992	42,8	41,5	166,61	108.20.30,41			T.	
	⊙ N.L.....	2.58,8	58,0	62,5	58,9	55,2	58,4		8,981		136.23.20,90				161,83	107.48.1,38			T.	
	⊙ S.L.....	1.35,0	31,2	37,5	32,9	29,2	33,7		9,594	-2	108.21.36,52	29,945	42,0	40,9	53,41	79.44.28,58			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,662	-1	108.21.37,93					79.44.29,99			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,854		108.21.36,82					79.44.28,88			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,952	+1	108.21.37,74					79.44.29,80			T.	
	⊙ S.L.....	...	...	...	...	...	...		10,083	+2	108.21.38,02					79.44.30,08			T.	
	Sirius.....	1.38,2	35,0	40,7	35,1	32,9	36,8				135.6.37,00				151,73	106.31.7,38			T.	
	H. C. 13194.....	1.18,9	15,1	21,5	16,2	13,9	17,0				92.41.17,53				29,42	64.3.45,60			T.	
	H. C. 13422.....	4.24,3	19,9	29,4	22,1	19,1	21,9				97.19.24,27				35,68	68.41.58,60			T.	
Jan. 30	δ Arietis.....	2.30,2	26,1	32,3	29,5	26,3	26,3		9,709		99.27.35,37	29,738	39,6	38,0	38,64	70.50.12,66			T.	
	ξ Tauri.....	4.24,1	19,5	29,0	22,5	19,1	21,9				109.24.24,17				55,35	80.47.18,17			T.	
	⊙ S.L.....	1.31,5	26,8	33,1	28,8	25,7	29,7		9,139	-2	104.21.42,64	29,742	39,0	38,6	46,26	75.44.27,55			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,241	-1	104.21.43,03					75.44.27,94			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,391		104.21.42,48					75.44.27,39			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,552	+1	104.21.41,78					75.44.26,69			T.	
	⊙ S.L.....	...	...	...	...	...	...		9,681	+2	104.21.41,84					75.44.26,75			T.	
	γ Tauri.....	1.24,0	20,0	25,0	22,9	17,9	23,0				103.21.22,60	29,750	39,0	38,6	44,62	74.44.5,87			T.	
	δ Tauri.....	1.35,0	30,4	37,3	33,5	29,9	34,3				101.31.33,93				41,73	72.54.14,31			T.	
	H. C. 12102.....	3.42,7	39,4	46,4	42,2	37,8	39,8				91.48.42,65	29,796	38,0	37,3	28,31	63.11.9,61			T.	
	H. C. 12339.....	3.63,2	60,0	68,5	65,1	59,7	61,4				91.34.4,35				27,99	62.56.30,99			T.	
	H. C. 12454.....	1.23,9	20,7	25,8	22,9	19,9	21,1				101.6.22,85				41,26	72.29.2,76			T.	
	H. C. 13931.....	0.62,9	60,7	65,1	61,9	58,6	61,0				90.36.2,03	29,803	38,3	37,0	26,80	61.58.27,48			T.	
	H. C. 14177.....	0.70	6,2	7,9	6,9	2,7	5,3				96.20.6,03				34,34	67.42.39,02			T.	
	δ Geminorum .....	...	...	...	...	...	...		3,237		96.22.27,05				34,39	67.45.0,09			T.	
	H. C. 14393.....	0.30,1	26,9	31,7	29,0	24,1	26,6				97.50.28,22				36,46	69.13.3,33			T.	
	(d) φ Geminorum R.	2.18,5	15,6	19,9	17,1	13,1	17,0		12,642		221.21.22,56				27,96	62.51.22,75			T.	
	(c) φ Geminorum ...	4.49,1	46,4	50,1	48,1	44,1	47,0		12,642		91.28.52,29					62.51.18,90			T.	
Jan. 31	⊙ S.L.....	2.28,8	25,9	30,0	26,5	24,7	26,2		7,672		100.58.16,39	29,602	44,1	49,1	39,80	72.20.54,84			T.	
	⊙ S.L.....	...	...	...	...	...	...		7,690	+1	100.58.18,22					72.20.56,67			T.	
	⊙ S.L.....	...	...	...	...	...	...		7,768	+2	100.58.18,88					72.20.57,33			T.	

ONE REVOLUTION of the MICROMETER = 20'',852. ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.  
 ASSUMED CO-LATITUDE = 37°.47'.8'',00.

(a) This Zenith Point was taken Dec. 24, 1851. See the preceding Volume.  
 (d) The image not good.

(b) Too unsteady to allow of accurate bisection..

(c) Negative



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"		r.		"	Inch.	"	"		"	"	"	
Feb. 2	» N.L. ....	2.30,6	27,5	31,3	29,2	27,1	28,8	+10,3	7,309	-2	96.33.25,27	29,766	48,6	49,5	33,72	67.55.57,64	T.		
	» N.L. ....	...	...	...	...	...	...		7,361	-1	96.33.24,51					67.55.56,88	T.		
	» N.L. ....	...	...	...	...	...	...		7,389		96.33.24,38					67.55.56,75	T.		
	» N.L. ....	...	...	...	...	...	...		7,453	+1	96.33.23,61					67.55.55,93	T.		
Feb. 3	(a) ☉ N.L. ....	4.27,1	25,1	24,8	23,7	21,5	25,0		9,139		134.59.42,25	29,962	50,5	47,5	148,51	106.24.9,41	T.		
	☉ S.L. ....	1.51,6	48,2	52,8	48,8	48,9	48,5		9,139		135.32.8,37				152,66	106.56.39,68	T.		
	ε Tauri R. ....	2.54,5	48,1	53,9	49,0	49,9	51,1		7,455		213.3.45,12	30,020	42,3	40,5	39,27	71.9.11,50	T.		
	ε Tauri ....	0.38,7	36,0	39,1	37,0	34,7	36,5		7,455	+1½	99.46.30,38					71.9.8,30	T.		
	51 Geminorum ..	2.60,1	55,9	63,5	57,4	56,7	56,9			+2½	102.12.59,70	30,038	40,7	39,0	43,18	73.35.41,53	T.		
	δ Geminorum ....	2.28,2	24,4	30,6	25,0	22,9	25,1				96.22.26,87				34,52	67.45.0,01	T.		
	(b) H. C. 14393. ....	0.32,3	28,1	33,1	27,4	25,0	28,0				97.50.29,13				36,59	69.13.4,37	T.		
	» N.L. ....	0.43,9	41,0	46,0	40,1	40,0	42,0		9,496	-2	96.35.54,34				34,83	67.58.27,82	T.		
	» N.L. ....	...	...	...	...	...	...		9,461	-1	96.35.54,29					67.58.27,77	T.		
	» N.L. ....	...	...	...	...	...	...		9,406		96.35.54,79					67.58.28,27	T.		
	» N.L. ....	...	...	...	...	...	...		9,422	+1	96.35.53,92					67.58.27,40	T.		
	» N.L. ....	...	...	...	...	...	...		9,416	+2	96.35.53,65					67.58.27,13	T.		
	Pollux R. ....	1.45,6	42,7	46,0	42,6	41,5	46,0		13,766		222.35.26,14	30,052	40,1	38,6	26,49	61.37.17,70	T.		
	Pollux ....	1.9,8	4,3	10,9	5,3	2,9	6,6		13,766	+2	90.14.48,79					61.37.13,93	T.		
	φ Geminorum R. ....	0.64,9	61,7	64,9	61,5	59,7	62,8		9,001		221.21.23,76				28,05	62.51.21,64	T.		
	φ Geminorum ...	3.32,7	27,7	35,3	30,7	27,1	30,2		9,001	+2	91.28.52,96					62.51.19,66	T.		
Feb. 4	(c) φ Geminorum ...	3.53,9	50,0	57,2	53,3	51,0	51,1	+9,4			91.28.53,95	29,673	48,8	51,4	26,97	62.51.18,53	T.		
	» N.L. ....	1.32,0	29,0	32,1	31,1	28,6	29,1		9,475	-2	98.11.45,38	29,674	49,0	51,3	35,73	69.34.18,72	T.		
	» N.L. ....	...	...	...	...	...	...		9,320	-1	98.11.46,72					69.34.20,06	T.		
	» N.L. ....	...	...	...	...	...	...		9,272		98.11.45,96					69.34.19,30	T.		
	» N.L. ....	...	...	...	...	...	...		9,197	+1	98.11.45,87					69.34.19,21	T.		
	» N.L. ....	...	...	...	...	...	...		9,082	+2	98.11.46,73					69.34.20,07	T.		
	δ Cancri ....	0.45,7	42,9	46,5	43,1	41,5	42,1				99.55.43,85				38,19	71.18.19,65	T.		
Feb. 5	δ Cancri ....	0.44,3	41,9	45,1	43,0	40,9	41,9				99.55.43,07	29,548	50,4	51,2	38,03	71.18.18,71	T.		
	λ Leonis ....	0.28,2	25,3	28,0	26,2	24,0	26,2				95.0.26,45	29,542	50,0	50,0	31,38	66.22.55,44	T.		
	(d) » N.L. ....	3.18,1	16,0	21,7	17,7	14,4	16,2		10,069	-2	101.18.22,52				40,14	72.41.0,27	T.		
	» N.L. ....	...	...	...	...	...	...		9,921	-1	101.18.22,77					72.41.0,52	T.		
	» N.L. ....	...	...	...	...	...	...		9,804		101.18.22,47					72.41.0,22	T.		
	» N.L. ....	...	...	...	...	...	...		9,682	+1	101.18.22,37					72.41.0,12	T.		
	» N.L. ....	...	...	...	...	...	...		9,621	+2	101.18.21,10					72.40.58,85	T.		
Feb. 6	η Tauri R. ....	0.51,5	49,8	50,9	50,9	47,9	50,0		8,321		217.51.25,43	29,910	45,3	42,0	32,26	66.21.25,22	T.		
	η Tauri ....	3.16,0	12,2	18,0	15,9	11,5	14,5		8,321		94.58.50,71					66.21.20,58	T.		
	ζ Persei R. ....	3.42,1	36,4	42,3	39,7	37,1	39,7		8,831		225.39.5,08				22,48	58.33.35,79	T.		
	ζ Persei ....	0.48,6	45,7	50,5	47,9	43,1	45,9		8,831	+1½	87.11.11,79					58.33.31,88	T.		
	Α' Tauri ....	1.63,9	59,7	64,9	62,4	59,2	62,0				96.57.2,65				34,95	68.19.35,21	T.		
	H. C. 7661 ....	4.4,9	0,9	7,7	2,6	0,8	1,1				95.9.4,27				32,49	66.31.34,37	T.		
	γ Tauri R. ....	3.60,5	55,4	62,6	59,9	55,9	58,4		10,213		209.28.55,58	29,922	44,2	41,6	44,60	74.44.7,41	T.		
	γ Tauri ....	1.29,9	26,0	29,0	28,3	22,2	26,9		10,213	+2½	103.21.23,31				44,60	74.44.5,52	T.		
	ε Tauri R. ....	2.52,2	47,1	52,9	49,3	48,0	48,5		7,340		213.3.46,04				39,06	71.9.11,41	T.		
	ε Tauri ....	0.39,9	35,6	39,1	37,4	32,8	37,5		7,340	+2¼	99.46.32,96					71.9.9,63	T.		
	Regulus R. ....	0.22,8	19,7	20,7	19,9	15,0	21,6		12,855		206.54.20,52	30,042	39,7	37,1	49,58	77.18.47,45	T.		
	Regulus ....	1.58,4	52,6	59,5	53,9	51,9	54,2		12,855		105.55.56,17					77.18.43,36	T.		
	γ Leonis R. ....	3.28,9	22,7	30,7	24,2	22,3	25,5		10,926		214.48.7,47				37,02	69.24.47,94	T.		
	γ Leonis ....	2.30,5	24,3	31,6	27,3	22,2	25,1		10,926		98.2.8,29					69.24.42,92	T.		
	B. (w.) x. 315 ...	0.62,1	56,1	61,9	59,8	53,9	58,9				113.55.59,08				65,59	85.19.2,28	T.		
	B. (w.) x. 422 ...	0.28,8	22,7	28,2	24,6	19,9	24,6				112.55.24,93				63,32	84.18.25,86	T.		
	(a)(e) » S.L. ....	4.40,0	35,1	38,0	35,0	32,2	37,3		8,850	-2	106.15.7,07	30,040	40,0	37,0	50,15	77.37.54,83	T.		
	» S.L. ....	...	...	...	...	...	...		8,740	-1	106.15.5,85					77.37.53,61	T.		
	» S.L. ....	...	...	...	...	...	...		8,542		106.15.6,53					77.37.54,29	T.		
	» S.L. ....	...	...	...	...	...	...		8,351	+1	106.15.7,15					77.37.54,91	T.		
	» S.L. ....	...	...	...	...	...	...		8,204	+2	106.15.6,90					77.37.54,66	T.		

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Negative correction for Runs.  
 but better than N.L.

(b) The *sp* of a close double star.

(c) Cloudy.

(d) Faint at times from cloud.

(e) Uneven,



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"					Inch.	o	o	"	o	"
Feb. 7	⊙ N.L.....	2.34,6	33,2	37,5	33,9	33,6	32,9	+9,4	10,146		133.47.32,03	30,052	47,0	46,2	140,72	105.11.50,36	T.
	(a) ⊙ S.L.....	4.59,0	56,4	58,6	56,4	55,9	57,0		10,146		134.19.54,33				144,48	105.44.16,42	T.
Feb. 9	Zenith Point....	0.19,0	13,9	18,4	15,8	9,9	17,7		10,263		66.25.10,39						T.
	Zenith Point....	0		18,4	15,8	9,9	17,7	+1,8	10,263		66.25.10,00						T.
Feb. 10	(b) H. C. 10345....	0		30,0	28,1	22,3	27,5				91.45.27,03	29,944	39,0	35,5	28,48	63.7.53,51	T.
	(c) H. C. 11036....	1		37,2	33,9	31,1	31,9				93.26.33,63		39,0	35,5	30,68	64.49.2,36	T.
	H. C. 11251....	3		59,9	55,1	51,6	51,3				97.8.54,85				35,75	68.31.28,60	T.
	χ <sup>3</sup> Orionis.....	1		8,9	5,9	0,9	3,9				98.56.5,00				38,34	70.18.41,34	T.
	(d) H. C. 11584....	3		34,5	29,9	26,1	30,0				101.53.30,45				42,85	73.16.11,30	T.
	(d) * R. 5 <sup>h</sup> 58 <sup>m</sup> 43 <sup>s</sup> ..	...		...	...	...	...		18,456		101.50.34,12				42,77	73.13.14,89	T.
	Pollux R.....	1		20,0	17,6	13,1	19,9		12,457		222.35.26,55	29,992	38,5	33,5	26,72	61.37.18,17	T.
	Pollux.....	0		42,1	38,2	35,5	39,0		12,457	+1½	90.14.47,73					61.37.12,45	T.
Feb. 11	(e) ⊙ S.L.....	2.49,5	49,3	51,3	46,9	45,4	46,7	+9,6	7,956		133.3.31,69	30,075	40,1	38,0	138,32	104.27.48,36	T.
	⊙ N.L.....	0.26,0	26,9	26,9	24,3	19,7	24,3		7,956		132.31.7,44				134,86	103.55.20,65	T.
	A <sup>1</sup> Tauri.....	1.63,0	64,0	65,9	62,7	59,6	60,4				96.57.3,25	30,074	40,0	36,5	35,55	68.19.37,15	T.
	H. C. 7661.....	3.63,0	63,9	67,0	62,7	58,9	59,0				95.9.3,72				33,04	66.31.35,11	T.
	γ Tauri R.....	3.61,7	59,7	63,9	61,8	55,8	58,5		10,222		209.28.56,89				45,30	74.44.6,06	T.
	γ Tauri.....	1.28,5	30,0	29,9	26,6	22,3	25,7		10,222		103.21.22,99					74.44.6,64	T.
	B.A.C. 1373....	0.20,6	22,2	22,2	20,2	15,7	17,5				97.20.19,83				36,10	68.42.54,28	T.
	(a) Aldebaran R....	4.39,7	41,5	41,1	38,7	36,1	40,2		7,872		210.25.23,80				43,77	73.47.37,62	T.
	(a) Aldebaran.....	4.12,9	13,3	10,9	11,0	5,8	11,2		7,872		102.24.54,97					73.47.37,09	T.
	Rigel R.....	0.62,1	61,3	61,8	60,9	57,1	60,5		9,203		185.51.17,55	30,078	37,1	32,9	107,30	98.22.47,40	T.
	Rigel.....	3.44,0	43,5	48,3	42,3	39,0	41,6		9,203		126.59.0,92					98.22.46,57	T.
	(f) Sirius R.....	3.57,3	56,9	61,2	57,0	53,0	55,7		10,866		177.43.40,04	30,064	34,8	30,4	155,39	106.31.13,00	T.
	Sirius.....	1.54,3	54,0	56,0	51,0	48,1	51,2		10,866		135.6.34,99					106.31.8,73	T.
	H. C. 15050....	2.22,8	22,0	25,2	20,6	16,0	18,7			+1	97.57.21,67	30,058	34,1	29,6	37,51	69.19.57,53	T.
	H. C. 15231....	3.49,0	47,7	53,8	47,8	43,8	44,6				91.53.48,98				29,13	63.16.16,46	T.
Feb. 12	⊙ N.L.....	1.18,9	19,6	19,9	17,3	13,2	16,9		9,596		132.11.26,47	29,892	38,5	37,5	132,16	103.35.36,98	T.
	⊙ S.L.....	3.40,0	39,7	42,0	38,8	33,9	36,2		9,596		132.43.48,02				135,51	104.8.1,88	T.
Feb. 17	Zenith Point....	0.15,5	16,1	14,8	13,0	10,0	15,4		10,219		66.25.9,65						T.
Feb. 18	(g) (a) ⊙ N.L.....	4.6,1	10,3	5,5	4,2	2,9	6,9		11,029		130.8.44,24	29,518	44,9	43,5	117,59	101.32.40,18	T.
	⊙ S.L.....	1.26,2	29,9	28,4	25,3	24,9	25,9		11,029		130.41.5,76				120,41	102.5.4,52	T.
Feb. 20	⊙ S.L.....	3.32,7	32,6	35,8	33,6	25,5	27,9		10,032		129.58.31,80	30,064	36,5	35,0	121,01	101.22.31,16	T.
	⊙ N.L.....	1.12,3	12,8	13,6	13,0	5,6	9,3		10,032		129.26.10,81				118,24	100.50.7,40	T.
Feb. 21	(g) ⊙ N.L.....	0.20,0	21,5	20,9	21,6	14,0	18,1	+10,1	11,909		129.4.39,64	30,220	38,0	38,6	116,16	100.28.33,32	T.
	⊙ S.L.....	2.37,9	40,0	41,6	40,7	34,1	37,2		11,909		129.36.59,67				118,87	101.0.56,06	T.
Feb. 24	⊙ S.L.....	1.41,6	43,1	42,8	42,0	37,1	40,9		10,729		128.31.26,62	30,456	41,2	39,6	114,13	99.55.18,27	T.
	(a) ⊙ N.L.....	4.24,6	27,0	25,3	24,0	19,3	22,9		10,729		127.59.8,45				111,60	99.22.57,57	T.
	Zenith Point....	0.12,2	12,9	11,9	10,3	6,0	12,4		10,026		66.25.10,48						T.
Feb. 25	(h) ⊙ N.L.....	2.31,4	32,9	34,2	30,0	27,0	30,4		11,356		127.37.3,54	30,316	40,6	40,7	109,17	99.0.50,23	T.
Feb. 27	(i) ⊙ S.L.....	0.6,5	7,9	6,2	3,0	1,5	5,4		11,146		127.24.41,22	30,050	40,0	43,6	106,66	98.48.25,40	T.
	⊙ N.L.....	2.44,3	46,8	48,8	43,8	42,3	43,0		11,146		126.52.21,85				104,35	98.16.3,72	T.
	⊙ S.L.....	1.17,9	21,6	19,7	16,1	14,1	15,5		8,132		102.6.56,85	30,000	40,0	40,6	42,82	73.29.37,19	T.
	⊙ S.L.....	...	...	...	...	...	...		8,271	+1	102.6.56,31					73.29.36,65	T.
	⊙ S.L.....	...	...	...	...	...	...		8,371	+2	102.6.56,69					73.29.37,03	T.
Feb. 28	(a)(k) ⊙ S.L.....	4.60,9	63,9	60,2	58,9	57,7	58,4		7,583	-2	99.15.47,15	29,564	39,1	36,1	38,28	70.38.22,95	T.
	⊙ S.L.....	...	...	...	...	...	...		7,639	-1	99.15.47,55					70.38.23,35	T.
	⊙ S.L.....	...	...	...	...	...	...		7,758		99.15.46,75					70.38.22,55	T.
	⊙ S.L.....	...	...	...	...	...	...		7,841	+1	99.15.46,80					70.38.22,60	T.
	⊙ S.L.....	...	...	...	...	...	...		7,942	+2	99.15.46,60					70.38.22,40	T.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) Before this observation Microscope B was found to be out of order, and the readings of A and B are consequently omitted. (c) 'Several preceding this.' (d) These two stars were judged to be of equal magnitude, and had nearly the same R.A. The R.A. of the second is assumed to be the same as that of the first, and may be a little in error. (e) Before this observation I rectified Microscope B. (f) Bad image: the mercury too unsteady. (g) Great motion. (h) S.L. clouded. (i) Very cloudy. (k) Densely clouded.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						Inch.	"			
Feb. 28	(a) Pollux .....	4. 49,2	52,0	49,9	48,5	47,5	48,1	+10,1			90. 14. 49,13	29,556	37,0	34,0	26,30	61. 37. 12,95	T.
	H. C. 15398 .....	1. 57,9	59,2	61,1	57,1	55,1	55,2				100. 16. 58,27				39,96	71. 39. 35,75	T.
	B.A.C. 2683 .....	1. 60,3	62,5	63,9	60,9	57,1	58,3				99. 22. 1,17				38,59	70. 44. 37,28	T.
	12 Cancri .....	3. 14,9	15,9	17,6	15,0	9,7	12,5				104. 33. 15,37				46,74	75. 55. 59,63	T.
	B.A.C. 2748 .....	0. 49,3	50,5	49,0	47,4	44,8	47,9				104. 10. 48,46				46,11	75. 33. 32,09	T.
	(a) H. C. 16172 .....	4. 24,7	28,7	25,9	24,6	21,1	24,3			+1	96. 59. 24,68	29,560	37,1	33,0	35,26	68. 21. 57,46	T.
	H. C. 16194 .....	...	...	...	...	...	...				96. 59. 33,29				35,26	68. 22. 6,07	T.
	(b) H. C. 16379 .....	0. 8,4	10,0	8,0	6,6	2,6	6,7		9,587		104. 25. 7,08				46,61	75. 47. 51,21	T.
	H. C. 16624 .....	3. 36,3	37,7	40,3	37,6	33,1	33,0				101. 48. 37,55				42,39	73. 11. 17,46	T.
Mar. 2	* R. 6 <sup>h</sup> . 44 <sup>m</sup> . 49 <sup>s</sup> .....	2. 27,8	26,9	28,9	25,1	19,9	24,6	+10,9			102. 37. 26,40	29,796	34,7	32,5	44,07	74. 0. 8,31	T.
	H. C. 13422 .....	4. 21,9	20,8	26,2	23,2	17,3	19,2				97. 19. 23,00				36,05	68. 41. 56,89	T.
	B.A.C. 2326 R. ....	2. 31,1	31,0	33,0	30,6	25,6	30,7		9,318		276. 52. 45,47				35,42	7. 18. 57,27	T.
	B.A.C. 2326 .....	2. 23,6	24,9	25,1	22,5	20,4	23,0		9,318	+1 1/4	35. 57. 40,17					7. 19. 2,59	T.
	51 Geminorum .....	2. 61,3	60,2	63,2	59,9	56,1	59,1				102. 13. 1,05	29,796	34,9	31,8	43,49	75. 35. 42,38	T.
	δ Geminorum .....	2. 27,2	27,6	29,7	26,1	22,0	24,4				96. 22. 27,03				34,76	67. 44. 59,63	T.
	Castor R. ....	1. 34,2	34,9	34,9	32,8	28,0	33,8		13,953		226. 25. 11,24				21,96	57. 47. 28,88	T.
	Castor .....	1. 28,9	30,0	31,2	27,9	24,1	26,5		13,953	+2	86. 25. 6,58					57. 47. 26,38	T.
	B.A.C. 2514 .....	0. 38,5	39,9	40,9	37,9	34,0	35,6		13,953		94. 4. 15,59				31,60	65. 26. 45,03	T.
	Pollux R. ....	0. 43,6	45,0	44,3	41,2	38,9	43,0		10,601		222. 35. 30,39				26,64	61. 37. 14,41	T.
	(a) Pollux .....	4. 59,6	62,0	61,7	58,9	56,1	58,2		10,601	+1 1/4	90. 14. 46,99					61. 37. 11,47	T.
	H. C. 15231 .....	3. 45,8	47,1	50,7	47,2	43,2	43,9			+2	91. 53. 47,97				28,74	63. 16. 14,55	T.
	H. C. 15459 .....	0. 63,1	65,0	63,7	63,3	58,6	60,1				97. 16. 2,68				36,02	68. 38. 56,54	T.
	(c) ) N.L. ....	3. 23,3	25,0	28,8	25,1	20,1	21,3		8,560	-2	97. 3. 57,73	29,800	35,0	30,5	35,84	68. 26. 31,41	T.
	) N.L. ....	...	...	...	...	...	...		8,451	-1	97. 3. 58,68					68. 26. 32,36	T.
	) N.L. ....	...	...	...	...	...	...		8,484		97. 3. 56,78					68. 26. 30,46	T.
	) N.L. ....	...	...	...	...	...	...		8,376	+1	97. 3. 57,94					68. 26. 31,62	T.
	) N.L. ....	...	...	...	...	...	...		8,392	+2	97. 3. 56,65					68. 26. 30,33	T.
	δ Cancri .....	0. 43,1	44,8	45,9	44,6	38,8	40,2				99. 55. 43,15	29,800	34,7	31,0	40,00	71. 18. 20,99	T.
	α Cancri .....	1. 40,6	40,6	41,9	38,1	34,6	38,0		10,123		106. 11. 37,00				50,28	77. 34. 25,12	T.
	(a) ) N.L. ....	4. 19,6	21,0	21,0	17,8	14,4	19,7		11,886		124. 58. 39,34	29,994	38,0	40,0	97,34	96. 22. 14,52	T.
	) S.L. ....	1. 32,3	35,3	34,6	31,1	26,7	30,9		11,886		125. 30. 53,04				99,41	96. 54. 30,29	T.
	(d) δ Cancri .....	0. 30,2	30,7	31,4	29,9	24,3	27,2		9,415		99. 55. 41,31	30,170	34,7	29,4	40,63	71. 18. 19,79	T.
	(d) α Cancri R. ....	3. 54,9	53,2	57,5	56,4	50,7	53,2		10,608		206. 38. 43,05				51,07	77. 34. 26,18	T.
	(d) α Cancri .....	1. 50,0	48,7	49,9	47,1	43,2	45,5		10,608	+1 1/2	106. 11. 35,47					77. 34. 24,38	T.
	(a) ) N.L. ....	4. 44,6	45,9	45,9	41,0	41,9			10,030	-2	99. 24. 48,12	30,170	34,0	29,4	39,85	70. 47. 25,81	T.
	) N.L. ....	...	...	...	...	...	...		9,863	-1	99. 24. 49,22					70. 47. 26,91	T.
	) N.L. ....	...	...	...	...	...	...		9,809		99. 24. 48,08					70. 47. 25,77	T.
	) N.L. ....	...	...	...	...	...	...		9,783	+1	99. 24. 46,47					70. 47. 24,16	T.
	) N.L. ....	...	...	...	...	...	...		9,627	+2	99. 24. 47,67					70. 47. 25,36	T.
	(a) α Lyncis R. ....	4. 24,2	24,9	22,2	23,0	18,4	24,7		12,389		229. 13. 32,86				19,00	54. 59. 4,30	T.
	α Lyncis .....	2. 35,3	37,0	39,1	37,1	32,1	31,7		12,389		83. 36. 46,51					54. 59. 3,35	T.
	h Ursæ Majoris R. ....	4. 61,9	61,0	60,9	61,1	56,0	63,0		11,531		257. 54. 28,72				12,48	26. 17. 36,96	T.
	h Ursæ Majoris .....	1. 25,4	27,1	26,1	25,9	22,5	22,9		11,531	+1 1/2	54. 55. 54,26					26. 17. 39,62	T.
	ξ Leonis .....	0. 38,0	36,9	37,8	35,9	31,4	36,1		11,531	+2	106. 40. 4,44	30,172	33,4	28,5	52,04	78. 2. 54,32	T.
	ο Leonis .....	3. 22,1	22,2	26,9	22,9	17,2	21,1				108. 3. 23,27				54,65	79. 26. 15,76	T.
	Regulus R. ....	3. 57,0	56,6	60,0	59,3	53,6	57,0		8,834		206. 54. 22,99	30,180	32,9	28,0	50,77	77. 18. 45,94	T.
	Regulus .....	0. 33,8	33,0	31,8	31,1	26,0	31,2		8,834	+2 1/4	105. 55. 55,81				50,77	77. 18. 44,42	T.
	Zenith Point. ....	0. 35,7	35,2	35,5	30,8	28,3	34,1		11,118		66. 25. 10,16						T.
Mar. 4	⊙ S.L. ....	2. 14,0	13,4	15,1	17,9	6,4	13,2		8,272		125. 7. 50,18	30,320	39,2	39,0	99,19	96. 31. 27,21	T.
	(a) ⊙ N.L. ....	4. 58,9	59,7	58,8	61,3	52,6	60,0		8,272	+2	124. 35. 35,04				97,14	95. 59. 10,02	T.
	(a) H. C. 10633 .....	4. 50,7	53,5	52,2	52,1	49,7	48,8		8,242		90. 55. 27,78	30,420	35,6	31,4	28,10	62. 17. 53,72	T.
	H. C. 10882 .....	3. 31,7	32,9	35,9	33,4	28,8	30,5				92. 43. 33,47				30,47	64. 6. 1,78	T.
	* R. 5 <sup>h</sup> . 38 <sup>m</sup> . 29 <sup>s</sup> .....	...	...	...	...	...	...		12,722		92. 42. 36,71				30,45	64. 5. 5,00	T.
	ξ Leonis R. ....	0. 34,9	34,6	33,1	34,0	27,8	33,0		10,973		206. 10. 12,81	30,478	31,5	26,7	52,77	78. 2. 58,12	T.
	ξ Leonis .....	0. 26,2	25,9	26,9	24,3	19,1	25,7		10,973		106. 40. 4,54					78. 2. 55,15	T.
	ο Leonis .....	3. 12,8	12,2	16,7	11,1	7,6	10,0		9,528	+4 1/2	108. 3. 23,31				55,41	79. 26. 16,56	T.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs.

(b) Too faint.

(c) Very badly defined.

(d) Bad image.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.		
		A	B	C	D	E	F						Tot.	Ext.		"	"	"		"	"
Mar. 4	B. (w.) ix. 929 ..	3. 47,3	45,5	50,5	46,1	42,0	43,6	+10,9			103. 48. 43,85	30,478	31,5	26,7	47,65	75. 11. 29,34	T.				
	B. (w.) ix. 1011 ..	0. 10,3	10,9	12,1	8,6	3,9	8,3				110. 50. 9,05				61,06	82. 13. 7,95	T.				
	) N.L. ....	2. 47,2	46,9	49,8	47,1	42,1	44,7		11,494	-2	103. 12. 22,54	30,486	30,4	25,6	46,74	74. 35. 7,19	T.				
	) N.L. ....	...	...	...	...	...	...		11,341	-1	103. 12. 22,49				46,74	74. 35. 7,07	T.				
	) N.L. ....	...	...	...	...	...	...		11,194		103. 12. 22,40					74. 35. 6,98	T.				
	) N.L. ....	...	...	...	...	...	...		10,041	+1	103. 12. 22,52					74. 35. 7,10	T.				
	) N.L. ....	...	...	...	...	...	...		10,928	+2	103. 12. 21,90					74. 35. 6,48	T.				
	(a) 37 Leonis R. ....	2. 15,9	14,4	18,0	14,2	10,1	13,2		13,905		208. 40. 53,67				48,38	75. 32. 12,87	T.				
	37 Leonis .....	0. 49,2	47,2	49,5	46,1	41,7	44,9		13,905		104. 9. 25,29					75. 32. 11,51	T.				
	(b) 42 Leonis R. ....	1. 36,3	36,9	37,1	35,1	31,2	34,6		11,375	+2	209. 56. 6,94				46,23	74. 16. 57,45	T.				
Mar. 5	(c) 42 Leonis .....	4. 37,0	37,1	37,2	35,0	29,0	33,9		11,375	+4	102. 54. 6,72					74. 16. 50,79	T.				
	(c) Egeria .....	3. 65,0	65,1	65,7	58,0	59,6	62,0				94. 19. 2,22	30,512	28,5	23,7	33,27	65. 41. 33,33	T.				
	⊙ N.L. ....	3. 15,7	15,6	17,9	11,9	9,4	12,2		12,392		124. 12. 25,09	30,650	37,5	37,8	96,99	95. 35. 59,92	T.				
	⊙ S.L. ....	0. 28,0	30,3	30,0	24,8	24,1	27,2		12,392	+1½	124. 44. 37,96				99,02	96. 8. 14,12	T.				
	37 Leonis .....	4. 23,7	22,1	27,9	21,3	17,3	22,2				104. 9. 23,98	30,692	31,6	26,0	48,66	75. 32. 10,48	T.				
	42 Leonis .....	4. 6,0	5,9	10,3	4,3	0,2	4,2				102. 54. 6,65				46,50	74. 16. 50,99	T.				
	(d) ) N.L. ....	1. 17,0	16,0	18,5	10,9	9,8	13,9		11,317	-2	108. 10. 54,95	30,696	31,5	26,0	56,14	79. 33. 48,93	T.				
	) N.L. ....	...	...	...	...	...	...		11,046	-1	108. 10. 56,77					79. 33. 50,75	T.				
	) N.L. ....	...	...	...	...	...	...		10,839		108. 10. 57,30					79. 33. 51,28	T.				
	) N.L. ....	...	...	...	...	...	...		10,670	+1	108. 10. 57,17					79. 33. 51,09	T.				
Mar. 6	(f) ) N.L. ....	...	...	...	...	...	...		10,556	+2	108. 10. 55,84					79. 33. 49,82	T.				
	H. C. 22079 .....	0. 43,0	41,8	42,6	37,2	37,3	39,9				112. 0. 40,53	30,696	30,4	26,6	64,08	83. 23. 42,45	T.				
	✓ Virginis .....	0. 34,1	32,6	35,3	28,1	26,8	31,5				111. 15. 31,58				62,42	82. 38. 31,84	T.				
	B. (w.) xi. 737 ..	2. 40,1	38,6	43,5	34,9	33,8	36,9			+1	112. 52. 38,93				66,05	84. 15. 42,82	T.				
	(e) * R. 11 <sup>h</sup> . 42 <sup>m</sup> . 42 <sup>s</sup> ..	...	...	...	...	...	...		16,747	+2	112. 50. 18,29				65,96	84. 13. 22,09	T.				
	B. (w.) xi. 867 ..	4. 30,2	30,0	35,0	27,1	25,0	29,0				122. 9. 31,02				92,04	93. 33. 0,90	T.				
	π Virginis .....	0. 40,8	40,8	42,2	35,9	34,9	39,0			+4	111. 10. 39,48				62,24	82. 33. 39,56	T.				
	(f) ) N.L. ....	1. 17,6	12,4	13,6	18,1	11,3	15,3		9,289		124. 21. 30,00	30,720	38,0	40,0	97,32	95. 45. 5,16	T.				
	⊙ N.L. ....	3. 60,2	54,5	59,2	61,0	54,3	57,0		9,289		123. 49. 13,96				95,34	95. 12. 47,14	T.				
	H. C. 13233 .....	3. 43,2	42,3	46,9	40,0	40,0	41,3				96. 43. 43,63	30,710	34,6	32,0	36,32	68. 6. 17,79	T.				
Mar. 8	H. C. 13422 .....	4. 16,3	16,0	19,4	14,2	11,8	13,7				97. 19. 16,78				37,19	68. 41. 51,81	T.				
	H. C. 13527 .....	2. 29,5	30,1	33,0	26,1	25,8	27,0		16,717		99. 30. 9,42				40,47	70. 52. 47,73	T.				
	H. C. 13531 .....	...	...	...	...	...	...				99. 32. 29,48				40,53	70. 55. 7,85	T.				
	(g) H. C. 13792 .....	4. 28,2	28,1	33,1	25,9	24,6	25,9				92. 39. 29,25				30,63	64. 1. 57,72	T.				
	(g) H. C. 13797 .....	...	...	...	...	...	...		10,125		92. 39. 26,64				30,63	64. 1. 55,11	T.				
	B.A.C. 2363 .....	4. 53,9	51,2	57,8	50,7	49,7	48,1			+1½	93. 39. 53,82	30,710	33,5	30,9	32,07	65. 2. 23,73	T.				
	(c)(h) H. C. 14177 .....	4. 63,0	64,8	63,2	58,4	60,4	61,0			0	96. 20. 1,83				35,83	67. 42. 35,50	T.				
	(i) π Virginis .....	0. 43,4	41,8	44,9	37,8	36,8	40,9				111. 10. 41,17	30,680	30,0	24,6	62,48	82. 33. 41,49	T.				
	(k) ) N.L. ....	1. 38,8	37,1	39,3	32,9	30,9	36,1		10,209	-2	113. 56. 40,29				68,81	85. 19. 46,94	T.				
	) N.L. ....	...	...	...	...	...	...		9,898	-1	113. 56. 42,66					85. 19. 49,31	T.				

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Extremely faint and the bisection doubtful. (b) Too faint. (c) Negative correction for Runs. (d) Extremely unsteady. The observer noticed an unsteadiness in one of the cross wires of Microscope D. (e) 'Follows the preceding star by 7'. (f) The readings of Microscope E were 4,5 and 49,8, which are unaccountably discordant. Readings have therefore been adopted which differ from the means of the other microscopes by the mean quantity 4",13 deduced from the observations of the Sun on March 5 and 10. (g) 'About 7' apart.' (h) 'A very faint object of less N.P.D. preceded.' (i) No definition. (k) Too unsteady for accurate bisection. (l) Two other stars, one north-preceding and the other south-following, were also noticed.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5".	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
Mar. 8	H. C. 15528. ....	4. 28,0	27,8	32,8	25,2	24,6	25,9	+9,9		+2	97. 4. 29,07	30,444	38,2	33,9	36,36	68. 27. 3,27	T.		
	B.A.C. 2683. ....	1. 60,1	60,9	62,9	55,9	56,6	57,0				99. 21. 59,55	30,442	37,6	33,7	39,77	70. 44. 37,16	T.		
	12 Cancri. ....	3. 14,9	13,9	15,9	10,2	9,0	11,1				104. 33. 13,55				48,17	71. 55. 59,56	T.		
	B.A.C. 2748. ....	0. 47,5	48,0	46,8	43,1	42,8	45,0			+2½	104. 10. 46,01				47,52	75. 33. 31,37	T.		
Mar. 10	(a) ☉ S.L. ....	3. 7,0	7,1	8,6	2,4	1,8	3,0		10,324		122. 47. 59,24	30,344	43,5	45,0	89,66	94. 11. 26,23	T.		
	☉ N.L. ....	0. 52,9	54,2	53,0	49,0	48,9	50,2		10,324		122. 15. 44,87				87,87	93. 39. 10,07	T.		
	H. C. 13681. ....	2. 55,7	57,8	58,4	52,1	54,1	52,5				90. 12. 56,07	30,290	41,6	39,7	26,59	61. 35. 19,99	T.		
	H. C. 13889. ....	2. 33,8	35,8	35,4	29,9	30,6	30,0				98. 7. 33,43				37,25	69. 30. 8,01	T.		
	53 Geminorum. .	3. 33,1	33,5	35,9	27,4	28,9	29,2				90. 28. 32,47				26,92	61. 50. 56,72	T.		
	H. C. 14177. ....	0. 5,9	7,8	5,7	1,1	2,7	3,2				95. 20. 4,40				34,70	67. 42. 36,43	T.		
	δ Geminorum. .	...	...	...	...	...	...		3,181		96. 22. 26,59				34,75	67. 44. 58,67	T.		
	H. C. 14421. ....	2. 7,9	10,0	9,9	3,1	5,0	5,5				91. 2. 7,60				27,64	62. 24. 32,57	T.		
	H. C. 14431. ....	...	...	...	...	...	...		9,923		91. 2. 9,21				27,64	62. 24. 34,18	T.		
	(b) H. C. 14597. ....	1. 23,9	25,4	25,2	18,9	20,7	21,0			+2½	91. 11. 23,36	30,296	41,8	38,4	27,91	62. 33. 48,60	T.		
	B.A.C. 2514. ....	4. 16,7	17,0	18,9	13,0	11,6	12,0				94. 4. 16,27				31,69	65. 26. 45,29	T.		
	* R. 7 <sup>h</sup> . 34 <sup>m</sup> . 43 <sup>s</sup>	2. 40,5	42,0	43,5	37,7	37,0	36,5				100. 17. 40,42				40,60	71. 40. 18,35	T.		
	82 Geminorum. .	2. 19,3	19,9	20,1	14,2	15,2	15,9				95. 7. 18,18				33,12	66. 29. 48,63	T.		
	H. C. 15281. ....	2. 34,7	36,2	36,0	30,2	30,8	30,8				98. 47. 33,95				38,34	70. 10. 9,62	T.		
Mar. 12	(c) ☉ N.L. ....	4. 7,8	9,3	8,5	6,7	1,0	3,6		11,221	+4	121. 28. 43,01	30,336	43,6	45,5	85,23	92. 52. 5,57	T.		
	☉ S.L. ....	1. 15,8	19,9	14,4	15,2	9,4	14,6		11,221	+4½	122. 0. 50,93				86,95	93. 21. 15,21	T.		
	H. C. 16624. ....	3. 38,9	9,2	41,0	36,0	34,9	34,7				101. 48. 38,63	30,364	38,1	33,1	43,53	73. 11. 19,49	T.		
	B. (w.) VIII. 653. .	4. 11,9	10,2	13,2	7,1	5,9	7,5				104. 34. 10,67				48,13	75. 56. 56,13	T.		
	H. C. 16964. ....	0. 7,8	8,6	8,9	4,6	3,2	5,9				94. 25. 6,53				32,59	65. 47. 36,45	T.		
	H. C. 17225. ....	1. 23,0	23,8	24,2	18,9	18,3	20,1				99. 16. 21,83				39,58	70. 38. 58,74	T.		
	B. (w.) VIII. 1072. .	4. 22,8	20,8	25,9	18,7	16,2	18,2				105. 54. 21,87				50,48	77. 17. 9,68	T.		
	B. (w.) VIII. 1210. .	0. 7,0	7,1	6,1	2,0	0,7	3,9				104. 30. 4,50				48,01	75. 52. 49,84	T.		
	H. C. 17801. ....	1. 43,7	43,9	42,5	38,2	38,0	40,9				103. 26. 41,75	30,362	38,4	32,5	46,27	74. 49. 25,35	T.		
	κ Cancri. ....	1. 34,7	35,2	36,1	30,4	30,5	33,0				107. 21. 33,83				53,20	78. 44. 24,36	T.		
	π <sup>1</sup> Cancri. ....	1. 59,4	59,7	60,7	55,1	54,7	56,0				103. 1. 58,23				45,58	74. 24. 41,14	T.		
	H. C. 18264. ....	1. 58,4	58,9	60,0	54,4	54,0	54,5			+1½	99. 11. 57,47				39,51	70. 34. 34,31	T.		
	α Hydræ R. ....	3. 17,8	17,5	20,0	15,5	13,0	16,0		11,443		186. 12. 47,61			31,7	107,03	98. 1. 18,09	T.		
	α Hydræ. ....	0. 62,0	62,5	65,0	59,2	57,7	59,3		11,443		126. 37. 31,84					98. 1. 16,20	T.		
Mar. 13	(d) Sirius R. ....	3. 14,5	15,0	17,4	13,0	11,0	12,0		8,813		177. 43. 39,63	30,392	41,5	37,5	154,74	106. 31. 13,78	T.		
	Sirius. ....	1. 14,7	15,7	15,8	11,2	9,4	11,9		8,813		135. 6. 38,27					106. 31. 10,34	T.		
	ζ Geminorum R. .	0. 62,9	63,9	62,2	59,0	58,5	61,0		13,347		214. 59. 51,79				37,13	69. 13. 4,01	T.		
	ζ Geminorum. ....	1. 38,0	39,0	39,7	34,0	33,9	34,9		13,347		97. 50. 27,23					69. 13. 1,69	T.		
	H. C. 13792. ....	4. 29,7	29,5	33,0	27,0	25,9	26,0				92. 39. 29,98				29,96	64. 1. 57,27	T.		
	H. C. 13797. ....	...	...	...	...	...	...		10,111		92. 39. 27,66				29,96	64. 1. 54,95	T.		
	53 Geminorum. .	3. 34,0	31,9	35,9	28,8	27,9	29,0				90. 28. 32,40				27,14	61. 50. 56,87	T.		
	H. C. 14177. ....	0. 5,9	7,1	5,1	1,0	2,1	3,1				96. 20. 4,08		39,4	36,0	35,08	67. 42. 36,49	T.		
	(e) δ Geminorum. .	...	...	...	...	...	...		3,187		96. 22. 26,15				35,14	67. 44. 58,62	T.		
	H. C. 14455. ....	0. 47,0	47,9	47,0	43,1	42,2	43,6				103. 0. 45,38				45,26	74. 23. 27,97	T.		
	Procyon R. ....	0. 23,7	26,0	24,4	20,5	19,6	22,8		13,089		199. 49. 18,56	30,400	29,0	35,3	64,53	84. 24. 4,64	T.		
	Procyon. ....	2. 5,9	7,0	7,9	2,1	0,9	2,8		13,089		113. 1. 0,71					84. 24. 2,57	T.		
	(f) H. C. 15124. ....	4. 43,4	44,9	43,9	38,9	39,2	40,8				97. 19. 41,75				36,57	68. 42. 15,65	T.		
	H. C. 15325. ....	0. 34,0	34,7	34,7	28,9	29,0	30,2				91. 40. 31,95				28,82	63. 2. 58,10	T.		
	δ Hydræ R. ....	3. 42,9	41,9	44,1	38,9	37,9	40,1		17,029		200. 26. 15,61	30,398	38,0	33,7	63,37	83. 47. 6,43	T.		
	δ Hydræ. ....	1. 30,0	31,1	31,6	25,9	26,7	27,4		17,029		112. 24. 2,68					83. 47. 3,38	T.		
	(g) Egeria. ....	3. 31,0	30,1	34,7	26,9	25,3	27,0		9,650		93. 58. 38,02	30,396	33,5	28,9	32,31	65. 21. 7,66	T.		
Mar. 14	Zenith Point. ....	0. 14,0	15,0	13,1	8,9	8,0	12,9	+9,8	10,066		66. 25. 10,67								T.
Mar. 15	(h) ☉ S.L. ....	4. 49,4	52,2	48,9	46,7	45,9	46,9		9,616		120. 49. 56,28	30,404	42,0	43,8	83,71	92. 13. 17,32	T.		
	☉ N.L. ....	2. 38,0	40,0	37,9	35,4	32,1	35,5		9,616		120. 17. 45,34				82,08	91. 41. 4,75	T.		
Mar. 16	H. C. 13681. ....	2. 56,9	56,4	58,4	51,5	52,1	53,3				90. 12. 55,72	30,344	42,3	40,0	26,63	61. 35. 19,68	T.		
	H. C. 13700. ....	...	...	...	...	...	...		14,343		90. 11. 25,16				26,59	61. 33. 49,08	T.		
	H. C. 13931. ....	0. 62,5	63,1	62,9	57,7	57,9	58,0				90. 36. 0,65				27,11	61. 58. 25,08	T.		

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Unsatisfactory observation: the Limbs fringed and waving. (b) 'Another south-preceding.' (c) Great motion: the observer too late.  
 (d) 'Very good.' (e) Bad image. (f) Negative correction for Runs. (g) Extremely faint: no other object. (h) Great motion.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.	
		A	B	C	D	E	F						Int.	Ext.						
		"	"	"	"	"	"						"	"		"	"	"		"
Mar.16	(a) H. C. 14075.....	4. 57,0	58,4	56,3	53,7	53,6	53,5	+9,8			93. 49. 55,38	30,344	42,3	40,0	31,31	65. 12. 24,02			T.	
	H. C. 14242.....	1. 39,2	40,4	40,4	35,8	35,3	36,3				92. 11. 38,43				29,16	63. 34. 4,92			T.	
	(b) H. C. 14393.....	0. 31,5	33,0	31,1	26,7	26,0	28,7				97. 50. 29,65			39,0	36,96	69. 13. 3,94			T.	
	H. C. 14556.....	0. 9,0	10,9	9,0	5,5	4,2	5,3				98. 30. 7,35				37,92	69. 52. 42,60			T.	
	(c) Procyon R....	0. 7,8	11,0	7,3	5,7	3,8	7,0		12,520		199. 49. 14,58				63,91	84. 24. 8,00			T.	
	(d) Procyon .....	1. 55,0	56,2	56,6	52,9	51,2	52,1		12,520	+4	113. 1. 2,32					84. 24. 3,56			T.	
(d) g Geminorum ...	0. 22,9	23,7	23,0	18,3	18,1	19,5				99. 45. 21,03				39,79	71. 7. 58,15			T.		
Mar.17	(e) Egeria.....	1. 27,9	27,1	29,9	24,1	21,9	24,7				93. 56. 26,38				31,74	65. 18. 55,45			T.	
	(f) β Corvi R.....	0. 23,9	25,2	26,0	21,3	20,3	22,9		22,055		171. 41. 12,01	30,262	36,1	33,5	220,38	112. 34. 47,04			T.	
	β Corvi.....	3. 16,1	15,0	18,0	10,9	10,0	11,8		22,055		141. 9. 3,33					112. 34. 41,04			T.	
	(g) Flora.....	2. 10,8	9,2	13,1	5,9	4,9	6,5		9,587	+1	112. 32. 17,81				63,41	83. 55. 18,55			T.	
Mar.19	⊙ N.L.....	3. 9,8	10,8	11,2	5,2	3,8	4,0	+9,5	10,123		118. 43. 5,88	30,134	42,5	46,5	76,41	90. 6. 20,55			T.	
	⊙ S.L.....	0. 16,2	18,2	15,9	13,0	10,6	13,0		10,123		119. 15. 12,00				77,90	90. 38. 28,16			T.	
	(h) Egeria.....	1. 52,9	53,7	55,3	51,1	49,9	48,1		9,800	+3	93. 56. 57,20	30,098	36,4	30,5	31,84	65. 19. 27,30			T.	
	10 Virginis.....	3. 9,8	9,2	11,8	6,3	3,2	3,9				115. 53. 8,35				71,36	87. 16. 17,97			T.	
	B. (w.) XII. 121..	4. 55,4	54,7	61,3	53,7	52,1	52,0				125. 14. 56,42				100,72	96. 38. 35,40			T.	
	B. (w.) XII. 128..	...	...	...	...	...	...		88,448		125. 18. 57,30				100,98	96. 42. 36,54			T.	
	B. (w.) XII. 249..	4. 5,5	4,0	9,2	2,7	1,1	0,7				123. 34. 5,13				94,39	94. 57. 37,78			T.	
	B. (w.) XII. 308..	0. 60,0	61,9	61,9	57,8	56,6	57,8				123. 50. 59,63				95,41	95. 14. 33,30			T.	
	B. (w.) XII. 414..	1. 55,3	55,7	57,4	51,7	51,1	52,2			+1½	121. 56. 54,48				88,81	93. 20. 21,55			T.	
	(i) B. (w.) XII. 517..	1. 64,1	63,2	66,5	59,7	59,1	60,0				123. 7. 2,75	30,094	35,7	30,0	92,87	94. 30. 33,88			T.	
	(k) Flora.....	1. 62,9	62,9	66,6	58,3	59,6	59,0		9,407		112. 17. 14,55				62,98	83. 40. 15,79			T.	
	Mar.20	⊙ S.L.....	1. 5,3	9,5	4,4	2,9	0,5	1,7		8,689		118. 51. 31,71	30,096	48,0	49,3	76,26	90. 14. 46,23			T.
		68 Geminorum..	3. 53,5	53,4	56,3	50,9	50,2	48,0				102. 28. 53,27	30,078	42,5	40,3	43,54	73. 51. 35,07			T.
		H. C. 14862.....	3. 8,8	8,3	11,3	3,9	4,7	4,0				101. 13. 7,82				41,56	72. 35. 47,64			T.
Pollux R.....		1. 23,4	23,9	23,7	18,6	18,7	22,5		12,475		222. 35. 30,62				26,41	61. 37. 13,53			T.	
Pollux.....		0. 39,0	41,3	41,5	35,8	36,9	36,5		12,475		90. 14. 47,09					61. 37. 11,76			T.	
H. C. 15281.....		2. 34,5	35,9	38,0	31,1	30,7	31,1				98. 47. 34,35				37,91	70. 10. 10,52			T.	
H. C. 15437.....		2. 56,8	57,3	59,3	53,9	52,8	53,3				92. 7. 56,50			40,2	28,81	63. 30. 23,57			T.	
B.A.C. 2658.....		3. 33,8	33,9	37,9	31,6	30,2	30,0				99. 58. 34,02				39,67	71. 21. 11,95			T.	
B.A.C. 2683.....		1. 61,1	61,9	64,0	58,2	57,9	56,5				99. 22. 0,55				38,77	70. 44. 37,58			T.	
12 Cancri.....		3. 15,1	14,9	17,5	11,8	9,7	11,8			+1	104. 33. 14,52				46,95	75. 55. 59,73			T.	
B.A.C. 2748.....		0. 49,9	50,9	50,8	46,3	46,9	46,7			+2	104. 10. 48,99				46,32	75. 33. 33,57			T.	
B. (w.) VIII. 232.		1. 38,0	39,0	39,2	34,1	33,6	35,4				104. 31. 37,05				46,90	75. 54. 22,21			T.	
o Ursæ Majoris R.		0. 13,0	14,0	13,0	9,0	8,6	12,2		11,197		255. 24. 46,74	30,076	42,0	39,8	9,48	28. 47. 21,52			T.	
o Ursæ Majoris ..		0. 59,9	61,0	60,9	55,4	58,0	58,4		11,197		57. 25. 34,26					28. 47. 23,04			T.	
B. (w.) VIII. 653.		4. 14,3	12,9	16,6	10,5	8,4	9,2				104. 34. 13,32				47,01	75. 56. 58,59			T.	
H. C. 16964.....		0. 7,7	9,9	9,2	5,2	3,8	4,7				94. 25. 6,78				31,83	65. 47. 36,87			T.	
B. (w.) VIII. 936.		3. 8,1	7,9	10,5	4,1	3,6	3,8				104. 28. 7,32				46,84	75. 50. 52,42			T.	
(l) Egeria.....		2. 12,9	12,9	15,2	9,8	7,8	9,6		8,410		93. 57. 45,21	30,080	40,1	37,6	31,27	65. 20. 14,84			T.	
(a)(m) Flora.....		4. 54,6	55,8	55,0	50,2	51,4	51,9				112. 9. 53,10	30,090	39,5	36,6	61,83	83. 32. 53,19			T.	
Mar.22	⊙ S.L.....	4. 34,0	39,0	35,2	32,0	32,5	32,8		10,958		118. 4. 15,69	30,094	46,4	61,3	72,35	89. 27. 26,30			B.	
	⊙ N.L.....	2. 26,8	30,4	28,0	25,0	23,3	22,7		10,958		117. 32. 6,82				70,98	88. 55. 16,06			B.	
	Zenith Point....	0. 60,4	64,0	60,5	58,1	58,5	59,5		12,434		66. 25. 9,74								B.	
	Pollux R.....	0. 39,0	41,0	36,8	36,4	36,4	37,7		10,358		222. 35. 30,60	30,090	50,2	49,0	25,96	61. 37. 13,10			B.	
	(a) Pollux.....	4. 55,4	56,5	56,0	51,0	53,4	52,9		10,358	+2½	90. 14. 47,21					61. 37. 11,43			B.	
	H. C. 15834.....	2. 45,4	46,3	46,2	43,0	41,4	41,3				103. 2. 44,78				43,67	74. 25. 26,71			B.	
	(n) H. C. 15939.....	0. 48,7	51,3	49,6	46,0	45,8	46,0				103. 40. 48,15				44,69	75. 3. 31,10			B.	
	H. C. 16110.....	0. 58,2	60,5	58,3	54,1	55,2	55,6				102. 5. 57,28				42,19	73. 28. 37,73			B.	
	(a) H. C. 16258.....	4. 30,2	33,4	30,2	27,4	26,9	30,3				96. 54. 29,57				34,60	68. 17. 2,43			B.	
	(o) B. (w.) VIII. 415.	3. 31,4	33,0	33,1	29,8	28,0	28,7				104. 38. 31,77				46,27	76. 1. 16,30			B.	
	H. C. 16624.....	3. 40,0	40,6	41,9	37,7	36,6	35,9				101. 48. 39,93	30,084	49,5	46,7	41,93	73. 11. 20,12			B.	
	B. (w.) VIII. 653.	4. 15,0	15,1	16,9	12,2	10,0	10,9				104. 34. 14,68				46,36	75. 56. 59,30			B.	
	(p) H. C. 16964.....	0. 6,4	10,3	8,8	5,6	4,7	6,1				94. 25. 7,02				31,39	65. 47. 36,67			B.	
	ε Hydræ R.....	1. 15,4	18,3	16,6	13,5	12,6	14,6		11,545		201. 10. 43,33				59,48	83. 2. 33,87			B.	
	(q) ε Hydræ.....	0. 9,1	12,2	9,6	6,5	5,8	6,7		11,545	+2½	111. 39. 36,24					83. 2. 33,98			B.	

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'The sp of a close double star.' (c) 'A mass of diffused light.' (d) Cloudy. (e) A north-preceding object was also bisected. (f) Not well defined. (g) Seen at intervals and too faint for accurate bisection. (h) Faint. (i) The following star. (k) 'Good.' (l) Very faint. (m) 'A brighter object of somewhat less N.P.D. followed.' (n) 'A fainter of equal N.P.D. followed.' (o) The sky misty. (p) 'Appeared oblong.' (q) Unsteady.



Month and Day.	NAME OF OBJECT.	Microscopo Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"		r.		° ' "	Inch.	°	°	"	° ' "	"	"	
Mar. 22	(a) Egeria .....	0. 41,9	42,4	41,3	38,2	37,6	38,8	+9,5	11,316		94. 0. 12,79	30,080	46,5	42,3	31,12	65. 22. 42,17			B.
Mar. 23	(b) ☉ N.L. ....	4. 46,0	52,7	46,5	44,3	44,1	44,2		13,748	+4	117. 8. 29,19	30,000	48,4	60,3	69,92	88. 31. 37,37			B.
	(b) B.A.C. 2363 ....	4. 58,2	63,3	57,7	56,5	57,0	54,8				93. 59. 57,90	29,941	51,9	55,4	29,73	65. 2. 25,89			B.
	(c) H. C. 14393 ....	0. 32,4	38,0	32,9	32,2	29,8	29,8				97. 50. 32,67				35,26	69. 13. 6,19			B.
	(c) H. C. 14394 ....	...	...	...	...	...	...		10,218		97. 50. 28,12				35,26	69. 13. 1,64			B.
	H. C. 14597 ....	1. 24,4	28,7	25,5	23,8	22,8	21,6				91. 11. 24,90				26,64	62. 33. 49,80			B.
	(d) H. C. 14771 ....	3. 15,0	18,8	17,0	13,8	12,1	11,8				97. 48. 15,78				35,21	69. 10. 49,25			B.
	H. C. 19239 ....	4. 50,0	52,6	53,5	49,5	48,0	47,3			+4	103. 19. 52,33	29,934	49,4	46,0	44,17	74. 42. 34,76			B.
	H. C. 19438 ....	0. 47,2	49,5	46,3	44,7	44,4	44,2				103. 10. 46,28				43,93	74. 33. 28,47			B.
	H. C. 19442 ....	...	...	...	...	...	...		7,684		103. 11. 34,57				43,95	74. 34. 16,78			B.
	B. (w.) ix. 1137.	3. 34,5	35,6	36,4	32,7	31,0	30,6				107. 8. 34,60				50,62	78. 31. 23,48			B.
	(e) Regulus R. ....	0. 57,2	58,6	55,1	54,9	54,2	55,5		14,587	+1	206. 54. 20,51				48,49	77. 18. 45,72			B.
	Regulus .....	2. 31,4	33,4	33,0	29,6	28,2	28,9		14,587	+2½	105. 55. 56,09					77. 18. 42,84			B.
	(f) Egeria .....	1. 16,2	18,0	16,7	13,7	12,0	13,6		8,841		94. 1. 39,60				31,02	65. 24. 8,88			B.
	Flora .....	3. 42,2	44,0	45,0	39,6	39,8	40,0		12,316		111. 47. 54,64			40,2	60,23	83. 10. 53,13			B.
Mar. 25	☉ S.L. ....	4. 16,4	17,3	20,6	13,7	9,9	11,8		12,353		116. 53. 27,23	29,950	44,3	45,5	71,31	88. 16. 36,80			B.
	☉ N.L. ....	2. 9,9	10,8	11,0	4,5	3,0	4,2		12,353		116. 21. 18,83				69,97	87. 44. 27,06			B.
Mar. 29	☉ N.L. ....	3. 29,6	32,7	32,1	27,4	24,0	26,4	+10,0	12,355		114. 47. 40,76	29,444	43,0	51,6	64,30	86. 10. 41,90			B.
	☉ S.L. ....	0. 33,0	36,0	32,5	31,6	28,1	30,1		12,355		115. 19. 42,94				65,52	86. 42. 45,30			B.
	Zenith Point. ....	0. 23,2	23,2	22,2	23,4	16,2	20,2		10,497		66. 25. 11,16								B.
Mar. 30	☾ N.L. ....	4. 9,4	10,1	11,3	8,3	5,3	2,2		9,945	-2	97. 54. 13,92	29,273	49,8	53,0	34,73	69. 16. 45,49			B.
	☾ N.L. ....	...	...	...	...	...	...		9,828	-1	97. 54. 14,50					69. 16. 46,07			B.
	☾ N.L. ....	...	...	...	...	...	...		9,755		97. 54. 14,26					69. 16. 45,83			B.
	☾ N.L. ....	...	...	...	...	...	...		9,672	+1	97. 54. 14,35					69. 16. 45,92			B.
	☾ N.L. ....	...	...	...	...	...	...		9,628	+2	97. 54. 13,58					69. 16. 45,15			B.
Apr. 1	(g) ☉ S.L. ....	4. 17,3	17,0	18,8	15,3	9,4	10,7	+7,8	7,660		114. 10. 4,66	30,044	45,9	48,5	64,59	85. 33. 6,53			B.
	☉ N.L. ....	2. 15,8	16,5	16,9	15,6	9,0	11,7		7,660	+2	113. 38. 4,21				63,40	85. 1. 4,89			B.
	Pollux R. ....	0. 10,7	11,9	9,6	9,5	5,9	8,9		8,912	+2½	222. 35. 31,63	30,120	46,4	42,8	26,32	61. 37. 13,41			B.
	(h) H. C. 15325 ....	0. 33,4	35,0	33,9	34,7	27,9	30,0				91. 40. 32,62				28,11	63. 2. 58,01			B.
	(b) H. C. 15528 ....	4. 30,9	33,0	32,2	32,8	26,4	29,2				97. 4. 30,62				35,31	68. 27. 3,21			B.
	H. C. 15834 ....	2. 45,2	46,0	47,4	46,8	40,5	40,3				103. 2. 45,07				44,28	74. 25. 26,63			B.
	B.A.C. 2748 ....	0. 50,1	51,0	49,9	50,4	46,2	46,5				104. 10. 49,22				46,13	75. 33. 32,63			B.
	H. C. 16172 ....	4. 25,4	26,2	30,1	27,6	22,2	23,7				96. 59. 27,02				35,20	68. 21. 59,50			B.
	H. C. 16194 ....	...	...	...	...	...	...		9,697		96. 59. 33,34				35,20	68. 22. 5,82			B.
	(i) α Hydræ R. ....	3. 50,2	50,2	52,8	52,2	46,8	46,5		12,994		186. 12. 48,35	30,160	44,6	37,7	104,98	98. 1. 15,35			B.
	α Hydræ .....	3. 37,0	38,6	42,2	38,9	34,2	34,6		12,994	+2½	126. 37. 35,96					98. 1. 18,22			B.
	Regulus .....	1. 59,2	59,7	61,6	59,7	55,8	54,4		12,994		105. 55. 56,49				49,71	77. 18. 43,48			B.
	(i) ρ Leonis .....	4. 12,0	13,4	17,7	13,2	8,3	8,4		12,994		108. 33. 10,84	30,178	42,8	36,3	54,71	79. 56. 2,83			B.
	(k) ☉ N.L. ....	0. 43,0	44,7	44,5	44,4	40,3	40,5		13,545	-2	105. 19. 36,16				48,82	76. 42. 22,26			B.
	☉ N.L. ....	...	...	...	...	...	...		13,481	-1	105. 19. 33,95					76. 42. 20,05			B.
	☉ N.L. ....	...	...	...	...	...	...		13,432		105. 19. 31,51					76. 42. 17,61			B.
	☉ N.L. ....	...	...	...	...	...	...		13,269	+1	105. 19. 31,53					76. 42. 17,63			B.
	☉ N.L. ....	...	...	...	...	...	...		13,116	+2	105. 19. 31,40					76. 42. 17,50			B.
	χ Leonis .....	0. 6,7	8,6	6,5	6,6	2,7	2,5		13,116		110. 29. 0,64				58,52	81. 51. 56,44			B.
	(f) Egeria .....	0. 26,5	28,5	28,4	27,8	22,2	24,9		13,568		94. 29. 12,08	30,190	42,4	34,7	32,39	65. 51. 41,75			B.
	(f) Flora .....	3. 32,5	30,5	35,2	32,6	26,3	28,5		9,753		110. 48. 37,00			32,8	59,65	82. 11. 33,93			B.
Apr. 2	(e) B.A.C. 2931 ....	3. 33,3	33,9	35,2	31,5	26,9	29,8				98. 13. 32,70	30,276	44,3	38,8	37,45	69. 36. 7,43			B.
	H. C. 17312 ....	2. 64,3	65,0	67,4	62,4	58,8	59,4				97. 23. 3,68				36,23	68. 45. 27,19			B.
	B. (w.) viii 1134	0. 45,7	47,2	45,5	41,7	40,6	41,9				104. 40. 43,95				47,60	76. 3. 28,83			B.
	(l) H. C. 18677 ....	1. 62,7	62,8	63,3	59,4	57,7	58,4				105. 2. 1,23				48,21	76. 24. 46,72			B.
	(m) B. (w.) ix. 591 ..	3. 23,9	23,3	24,8	20,5	17,2	19,6				103. 53. 22,42				46,27	75. 16. 5,97			B.
	χ Leonis .....	3. 61,2	61,3	63,4	57,2	55,1	54,7				110. 28. 59,85	30,282	41,3	33,5	59,07	81. 51. 56,20			B.
	α Leonis R. ....	4. 13,8	13,8	15,7	13,0	6,7	11,0		11,351	+1½	205. 33. 45,18				52,80	78. 39. 26,34			B.
	α Leonis .....	1. 63,1	63,8	66,0	59,5	58,1	59,2		11,351	+4	107. 16. 34,44					78. 39. 24,52			B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Excessively faint. (b) Negative correction for Runs. (c) Day-light strong. (d) 'A fainter precedes.' (e) Bad definition.  
 (f) Very faint. (g) Faint from clouds: N.L. bisected best. (h) Strong day-light. (i) Blazing. (k) Great motion. (l) Cloudy.  
 (m) 'Nothing in the place of H. C. 18825.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		"	Inch.	"	"	"	"	
Apr. 2	) N.L.....	3. 10,5	10,5	13,0	5,9	5,0	5,0	+7,8	10,941	-2	110. 42. 57,51	30,282	41,3	33,5	59,55	82. 5. 54,34	B.
	) N.L.....	...	...	...	...	...	...		10,772	-1	110. 42. 57,02					82. 5. 53,85	B.
	) N.L.....	...	...	...	...	...	...		10,523		110. 42. 58,22					82. 5. 55,05	B.
	) N.L.....	...	...	...	...	...	...		10,344	+1	110. 42. 58,03					82. 5. 54,86	B.
	) N.L.....	...	...	...	...	...	...		10,183	+2	110. 42. 57,49					82. 5. 54,32	B.
Apr. 3	(a) ☉ N.L.....	2. 14,0	18,5	17,0	12,6	9,0	9,9		10,482		112. 52. 4,03	30,291	43,4	47,5	62,36	84. 15. 3,67	B.
	☉ S.L.....	4. 13,8	15,5	15,0	11,3	6,7	8,6		10,482		113. 24. 2,85				63,53	84. 47. 3,66	B.
	(b) Egeria.....	3. 9,8	10,2	13,4	5,6	4,6	5,0		10,310		94. 38. 2,45	30,217	39,1	33,0	32,73	66. 0. 32,46	B.
	) N.L.....	0. 7,1	9,5	8,6	3,8	3,1	4,2		10,318	-2	116. 45. 8,00				73,48	88. 8. 18,76	B.
	) N.L.....	...	...	...	...	...	...		10,139	-1	116. 45. 7,39					88. 8. 18,15	B.
	) N.L.....	...	...	...	...	...	...		9,991		116. 45. 6,26					88. 8. 17,02	B.
	) N.L.....	...	...	...	...	...	...		9,758	+1	116. 45. 6,90					88. 8. 17,66	B.
	) N.L.....	...	...	...	...	...	...		9,572	+2	116. 45. 6,60					88. 8. 17,36	B.
Apr. 5	Zenith Point....	0. 5,3	7,3	4,9	1,1	0,8	3,9		9,673		66. 25. 10,72						B.
Apr. 8	(a) ☉ N.L.....	0. 21,0	27,0	20,8	19,4	14,6	16,2		13,997		110. 58. 56,57	30,240	45,6	50,6	57,93	82. 21. 51,78	B.
	☉ S.L.....	2. 21,0	24,8	20,2	18,9	13,4	16,9		13,997		111. 30. 56,45				59,02	82. 53. 52,75	B.
	(c) Egeria.....	1. 55,9	55,2	56,0	50,4	50,4	52,3		12,800		95. 5. 55,46	30,232	41,8	34,6	33,28	66. 28. 26,02	B.
Apr. 10	(d) ☉ N.L.....	1. 41,5	43,8	41,3	37,8	34,8	38,8	+8,0	16,319	+3	110. 14. 29,31	30,217		55,9	55,81	81. 37. 22,98	B.
	☉ S.L.....	3. 39,4	40,7	41,0	37,4	35,3	35,5		16,319	+4	110. 46. 28,80				56,85	82. 9. 23,51	B.
	(e) B. (w.) ix. 1011..	0. 12,1	15,3	11,8	9,3	7,8	10,4				110. 50. 11,17	30,169	48,5	44,4	58,24	82. 13. 7,27	B.
	(f) Regulus R.....	0. 17,8	20,5	16,8	13,9	13,8	17,2		12,563	-1	206. 54. 23,21				49,03	77. 18. 43,96	B.
	Regulus.....	1. 51,4	52,5	51,5	46,3	47,9	47,5		12,563	+1	105. 55. 56,64					77. 18. 43,53	B.
	(f) λ Ursæ Majoris R.	2. 22,8	22,8	22,8	18,7	17,5	21,2		12,078	+2	237. 51. 37,37				8,96	46. 20. 49,73	B.
	λ Ursæ Majoris..	4. 20,2	20,1	22,9	17,4	15,5	17,5		12,078	+4	74. 58. 39,65					46. 20. 46,47	B.
Apr. 12	☉ S.L.....	4. 21,9	24,3	24,4	20,4	15,4	18,7		15,387		110. 2. 29,69	30,216	46,4	49,4	56,15	81. 25. 23,70	B.
	☉ N.L.....	2. 27,7	31,1	28,0	25,2	21,0	24,4		15,387		109. 30. 34,55				55,12	80. 53. 27,53	B.
	B. (w.) ix. 26....	2. 14,6	16,5	15,3	11,7	10,3	10,3				104. 22. 13,70	30,233	49,2	46,6	46,26	75. 44. 57,82	B.
	H. C. 18251.....	0. 7,0	10,0	6,3	4,3	2,9	3,6				103. 0. 5,70				44,03	74. 22. 47,59	B.
	H. C. 18414.....	3. 54,6	55,0	56,0	51,0	51,6	49,5				101. 23. 53,98				41,51	72. 46. 33,35	B.
	B. (w.) ix. 398..	0. 46,9	49,5	46,0	43,7	43,7	44,3				103. 40. 45,88				45,12	75. 3. 28,86	B.
	B. (w.) ix. 493..	3. 63,3	63,8	65,6	61,5	59,7	57,8				107. 49. 3,02				52,28	79. 11. 53,16	B.
	H. C. 18861.....	2. 9,8	12,6	10,8	6,5	5,3	5,9				99. 2. 9,05				37,97	70. 24. 44,88	B.
	B. (w.) ix. 782..	2. 8,0	9,0	8,2	5,0	2,7	3,7		7,278		104. 13. 3,43				46,01	75. 35. 47,30	B.
	B. (w.) ix. 808..	1. 25,6	26,6	24,8	22,0	19,9	22,0		7,278		110. 47. 20,61				58,00	82. 10. 16,47	B.
	B. (w.) ix. 1011..	0. 15,5	17,2	13,6	11,6	11,4	11,6				110. 50. 13,53				58,10	82. 13. 9,49	B.
	(g)(h) Psyche.....	4. 58,7	59,5	56,9	54,4	54,3	55,6				104. 49. 56,55	30,224	47,0	43,4	47,33	76. 12. 41,74	B.
	(i) Regulus R.....	0. 16,2	17,6	13,4	12,0	11,0	13,6		12,348		206. 54. 25,06				49,22	77. 18. 42,30	B.
	Regulus.....	1. 45,4	46,4	45,2	42,2	40,4	41,4		12,348	+2	105. 55. 55,13					77. 18. 42,21	B.
	(k) Egeria.....	3. 63,8	61,0	65,2	57,4	57,7	58,6		12,156		95. 28. 16,72	30,240		39,5	33,46	66. 50. 48,04	B.
	(l) Flora.....	0. 31,6	33,3	31,2	27,7	25,4	28,7		12,156		109. 54. 44,82	30,254	43,4	37,8	57,33	81. 47. 40,01	B.
Apr. 13	(m) ☉ N.L.....	3. 20,1	23,2	21,4	19,0	14,4	16,1		8,515		109. 8. 50,89	30,278	41,8	58,3	53,56	80. 31. 42,31	B.
	☉ S.L.....	0. 17,0	21,5	16,3	14,0	12,1	14,4		8,515		109. 40. 46,92				54,57	81. 3. 39,35	B.
	(n) B.A.C. 3103....	0. 14,2	19,0	15,3	12,7	13,3	11,7				100. 55. 14,42	30,257	52,3	52,2	40,41	72. 17. 52,69	B.
	(g) B. (w.) ix. 119..	4. 42,9	46,2	42,5	39,2	40,9	39,8				106. 24. 41,83				49,22	77. 47. 28,91	B.
	H. C. 18320.....	3. 29,8	32,3	31,0	27,3	26,1	25,8				99. 13. 29,63				37,84	70. 36. 5,33	B.
	H. C. 18414.....	3. 51,8	54,0	54,6	50,2	49,7	47,6				101. 23. 52,35				41,07	72. 46. 31,28	B.
	α Hydræ.....	2. 38,3	42,4	44,0	37,0	36,5	36,5				126. 37. 39,82				102,21	98. 1. 19,89	B.
	B. (w.) ix. 533..	4. 7,6	9,4	9,1	4,4	3,7	2,3				106. 14. 7,17				48,92	77. 36. 53,95	B.
	B.A.C. 3299.....	3. 41,0	43,0	42,2	38,2	36,6	36,1				104. 38. 40,48				46,22	76. 1. 24,56	B.
	B. (w.) ix. 782..	3. 5,0	6,9	6,5	2,4	1,3	0,1				104. 13. 4,52				45,52	75. 35. 47,90	B.
	B. (w.) ix. 872..	2. 38,9	40,8	39,6	36,6	34,9	34,6				104. 27. 38,27				45,92	75. 50. 22,05	B.
	B. (w.) ix. 962..	2. 21,1	24,5	23,2	19,4	18,0	18,0				111. 27. 21,33				58,74	82. 50. 17,93	B.
	(o) Psyche.....	4. 15,3	16,2	16,8	11,5	10,6	10,2				104. 49. 14,57	30,252	51,4	51,2	46,60	76. 11. 59,03	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Great motion, and the definition bad. (b) 'An object followed lower in the field.' (c) Extremely faint. (d) Very unsteady.  
 (e) Hazy sky. (f) Steady. (g) Negative correction for Runs. (h) 'No object near this.' (i) Not well defined. (k) If this be the Planet,  
 the Circle reading is 4' too small. (l) Bright. (m) Badly defined and unsteady. (n) Much day-light. (o) Estimated of Mag. 11.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
Apr.13	(a) Regulus R.....	4.29,9	29,6	30,5	25,8	25,2	27,0	+8,0	10,233		206.54.24,32	30,252	51,4	51,2	48,49	77.18.42,31	B.		
	Regulus.....	0.63,7	65,4	62,9	59,3	59,7	59,4		10,233	+1	105.55.57,18					77.18.43,53	B.		
	(b)(c) Egeria.....	4.32,5	37,0	32,8	29,6	30,3	30,8		10,233		95.39.27,17	30,243	48,8	44,7	33,35	67.1.58,38	B.		
	Flora.....	1.9,2	10,9	9,7	5,8	4,5	6,3		10,233		109.51.3,16	30,238		43,8	56,47	81.13.57,49	B.		
	(d) N.L.....	3.56,5	57,5	58,9	54,2	54,0	53,8		13,426		134.37.45,43	30,230	47,1	54,5	145,02	106.2.8,31	B.		
	» N.L.....	...	...	...	...	...	...		13,245	+1	134.37.51,79					106.2.14,67	B.		
	» N.L.....	...	...	...	...	...	...		13,127	+2	134.37.56,76					106.2.19,64	B.		
Apr.14	⊙ S.L.....	4.14,0	13,0	13,3	8,1	4,7	7,0				109.19.11,12	30,222	57,2	67,7	52,79	80.42.1,77	B.		
	⊙ N.L.....	2.18,6	19,3	17,0	12,3	10,2	13,3				108.47.15,72				51,82	80.10.5,40	B.		
	Zenith Point....	0.29,5	28,9	25,4	23,6	22,3	26,5		10,768		66.25.10,14								
	(e) Psyche.....	3.54,2	52,8	53,8	48,9	49,2	47,6		10,054		104.48.50,99	30,180	55,2	53,3	46,28	76.11.35,13	B.		
	(f) Egeria.....	2.21,0	21,0	19,3	16,4	15,0	17,4		11,344		95.46.50,95	30,174	53,6	48,2	33,21	67.9.22,02	B.		
	Flora.....	2.64,4	65,4	64,3	60,4	58,8	60,3		11,344		109.47.35,04				55,73	81.10.28,63	B.		
Apr.15	⊙ N.L.....	0.60,7	63,0	58,8	56,4	54,8	55,4		10,492		108.25.48,16	30,132	51,2	55,8	52,25	79.48.38,27	B.		
	⊙ S.L.....	2.58,3	60,0	57,5	54,4	52,0	52,7		10,492		108.57.46,32				53,23	80.20.37,41	B.		
Apr.16	(g) Psyche.....	4.34,6	33,5	36,3	30,6	27,4	28,6		13,234		104.48.25,59	30,008	44,8	36,4	47,64	76.11.11,09	B.		
	Egeria.....	2.18,8	15,8	17,4	13,3	9,4	12,9		10,110		96.2.12,91	29,996	42,4	32,7	34,45	67.24.45,22	B.		
	Flora.....	1.17,3	16,0	16,4	11,1	7,6	11,8		10,110		109.41.11,39			31,3	57,17	81.4.6,42	B.		
	(h) Spica R.....	2.34,9	31,5	35,1	28,6	27,1	30,4		14,604		183.50.55,93	29,972	40,2	30,0	116,90	100.23.19,11	B.		
	Spica.....	0.65,3	63,6	65,9	59,0	58,5	60,3		14,604	+4	128.59.25,93					100.23.20,69	B.		
Apr.17	⊙ S.L.....	0.20,1	23,2	22,7	17,8	14,3	16,8		9,983		108.15.19,58	29,878	51,0	48,3	52,29	79.38.9,73	B.		
	⊙ N.L.....	3.29,5	29,6	30,9	23,8	22,5	24,0		9,983		107.43.27,98				51,32	79.6.17,16	B.		
	B. (w.) xi. 345 ..	0.29,9	32,5	30,2	26,2	22,9	27,0				109.55.28,23	29,810	46,3	41,4	56,10	81.18.22,19	B.		
	Egeria.....	0.11,0	11,7	9,3	5,2	3,8	5,8				96.10.7,83				33,80	67.32.39,49	B.		
	B. (w.) xi. 777 ..	1.43,1	44,5	43,9	39,4	37,4	39,3				114.41.41,70				66,25	86.4.45,81	B.		
	B. (w.) xi. 867 ..	4.40,2	39,5	43,8	36,8	34,2	35,4				122.9.39,55				86,65	93.33.4,06	B.		
	B. (w.) xi. 920 ..	0.20,0	21,8	19,8	14,9	13,7	16,0				115.55.17,77				69,17	87.18.24,80	B.		
	B. (w.) xi. 975 ..	2.51,5	51,4	52,1	47,4	45,2	45,6				114.37.49,62				66,10	86.0.53,58	B.		
	Flora.....	3.34,1	31,8	34,5	29,3	25,3	27,0				109.38.31,27	29,800	44,9	39,4	55,76	81.1.24,89	B.		
Apr.19	(i) Egeria.....	1.42,9	43,0	42,6	38,2	36,3	37,0				96.26.40,43	30,041	43,4	36,0	34,83	67.49.13,12	B.		
	β Corvi.....	4.13,6	11,1	15,2	7,7	7,4	7,5				141.9.11,52	30,032	41,1	32,2	219,32	112.34.48,70	B.		
Apr.20	⊙ N.L.....	1.17,5	15,6	17,4	8,0	9,5	7,3		9,928	+4	106.41.15,81	30,041	45,5	53,8	49,19	78.4.2,86	B.		
	⊙ S.L.....	2.66,7	66,6	67,3	60,4	59,3	57,4		9,928	+4	107.13.6,69				50,12	78.35.54,67	B.		
	α Hydræ R.....	3.35,8	33,1	34,0	31,3	28,3	30,7		12,429	-1	186.12.42,52	30,037	47,2	48,5	102,24	98.1.17,86	B.		
	α Hydræ.....	3.28,6	30,0	30,7	27,4	25,4	25,0		12,429	+1	126.37.38,10					98.1.18,20	B.		
	(k) H. C. 19589....	1.48,0	46,8	47,1	42,5	42,7	42,9		13,195		105.0.38,83				46,85	76.23.23,54	B.		
	(l) B. (w.) x. 422....	0.29,1	30,3	28,9	24,3	23,9	25,6				112.55.27,40	30,056	45,8	43,4	62,52	84.18.27,78	B.		
	(m) B. (w.) x. 576....	0.31,5	32,6	30,9	26,4	25,8	27,3				115.20.29,20				68,04	86.43.35,10	B.		
	(n) H. C. 20732....	0.64,5	64,9	63,9	60,2	58,9	60,1				109.51.2,35				56,18	81.13.56,39	B.		
	(l) * R. 10 <sup>b</sup> . 38 <sup>m</sup> . 18 <sup>n</sup> ..	...	...	...	...	...	...		8,245		109.51.38,94				56,20	81.14.33,00	B.		
	(b) B. (w.) x. 776....	4.59,0	60,0	58,8	53,3	55,4	55,3				112.14.57,03				61,07	83.37.55,96	B.		
	B. (w.) x. 846....	0.19,6	20,4	18,5	14,2	13,4	15,6				115.10.17,02				67,64	86.33.22,52	B.		
Apr.21	⊙ S.L.....	2.13,7	16,2	15,2	12,9	8,9	10,7		8,580	+1	106.52.43,57	30,028	46,0	55,9	49,29	78.15.30,72	B.		
	⊙ N.L.....	0.23,0	27,3	23,7	22,4	19,6	20,4		8,580	+1	106.20.52,87				48,38	77.43.39,11	B.		
	(b)(n) Regulus R.	4.40,7	41,2	36,3	36,3	36,5	39,3		10,719	+2	206.54.23,15	29,976	46,7	44,3	48,73	77.18.43,72	B.		
	Regulus.....	1.12,8	13,5	11,3	9,0	8,1	8,5		10,719	+4	105.55.56,37					77.18.42,96	B.		
	(b)(c) Flora.....	4.14,4	17,2	13,6	11,0	9,6	12,5				109.29.12,85	29,948	44,5	40,0	55,66	80.52.6,37	B.		
	(o) Zenith Point....	0.32,8	32,1			26,0	28,8	+10,8			66.25.12,30							B.	
Apr.22	(p) ⊙ N.L.....	0.40,9	45,2			36,1	36,8		9,797		106.0.44,33	29,850	49,6	60,0	47,13	77.23.27,16	B.		
	⊙ S.L.....	2.29,3	33,0			25,3	25,7				106.32.33,91				48,03	77.55.17,64	B.		

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8".00.

(a) The mercury unsteady, a south wind blowing. (b) Negative correction for Runs. (c) 'Bright.' (d) 'Of the last degree of faintness: the bisections very doubtful.' (e) The sky hazy and Planet faint; but the bisection was considered good. (f) 'The following of two objects.' (g) Extremely faint. (h) Unsteady. (i) 'Good.' (k) Cloudy. (l) Thick mist. (m) Very faint. (n) The mercury agitated by wind. (o) The Zenith Point and Runs from measures taken on April 25, Microscopes C and D being omitted. (p) Microscope D was under repair, and C is therefore omitted.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract-ion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Apr.23	⊙ S.L.....	2. 24,2	28,0	23,4	24,4	21,4	20,6	+10,8	9,525	+1 1/2	106. 12. 34,86	29,850	52,4	63,3	47,15	77. 35. 17,44	B.
	⊙ N.L.....	0. 37,8	40,8	35,0	38,6	32,5	33,4		9,525	+1 1/2	105. 40. 46,89				46,27	77. 3. 28,59	B.
	(a) Egeria.....	1. 52,1	52,2	52,3	51,6	49,6	47,8		10,053		97. 1. 50,49	29,932	50,7	46,7	34,75	68. 24. 20,67	B.
	Flora.....	0. 60,2	60,6	58,5	58,2	56,4	55,8		10,053		109. 25. 57,52				54,76	80. 43. 47,71	B.
Apr.24	⊙ S.L.....	3. 15,6	14,0	14,6	12,2	8,3	8,6		11,020		105. 52. 52,10	29,950	49,3	51,5	47,89	77. 15. 35,42	B.
	⊙ N.L.....	1. 23,9	24,2	22,2	23,5	17,0	19,3		11,020		105. 21. 0,91				46,99	76. 43. 43,33	B.
	(b) N.L.....	3. 53,2	53,0	53,4	53,0	50,2	48,4		11,654	-2	96. 3. 17,68	29,836	49,4	47,5	33,25	67. 25. 46,36	B.
	N.L.....	...	...	...	...	...	...		11,438	-1	96. 3. 22,65					67. 25. 51,33	B.
	N.L.....	...	...	...	...	...	...		11,230		96. 3. 27,60					67. 25. 56,28	B.
	N.L.....	...	...	...	...	...	...		11,143	+1	96. 3. 30,15					67. 25. 58,83	B.
	N.L.....	...	...	...	...	...	...		11,020	+2	96. 3. 33,56					67. 26. 2,24	B.
	ε Leonis R.....	1. 11,2	10,4	8,5	8,8	5,4	8,0		13,056	-1	218. 40. 5,33	29,932	47,8	41,3	31,25	65. 32. 46,49	B.
	ε Leonis.....	1. 24,3	22,8	22,8	22,4	16,7	18,2		13,056	+1	94. 10. 18,03					65. 32. 44,71	B.
	Regulus R.....	0. 25,8	26,0	22,4	24,5	20,4	22,1		12,853	-1	206. 54. 24,15				48,96	77. 18. 45,38	B.
	Regulus.....	1. 60,5	58,2	58,8	56,6	53,4	53,1		12,853	+1	105. 55. 58,02					77. 18. 42,41	B.
	λ Ursæ Majoris R.	2. 14,6	11,6	12,4	10,4	6,8	9,3		11,352	+1 1/4	237. 51. 43,24				8,94	46. 20. 46,27	B.
	λ Ursæ Majoris..	4. 8,8	7,5	10,1	7,7	3,6	3,7		11,352	+2 3/4	74. 58. 41,25					46. 20. 45,62	B.
	H. C. 20732.....	0. 64,7	63,9	63,1	63,0	57,3	59,4			+3	109. 51. 2,48	29,922	45,8	39,0	56,44	81. 13. 54,35	B.
	(d) B. (w.) x. 776 ..	4. 61,0	60,9	59,6	59,1	56,1	56,4				112. 14. 58,85				61,36	83. 37. 55,64	B.
	(d) H. C. 21015.....	3. 65,7	66,4	62,9	64,2	59,6	61,4				110. 9. 3,02				57,03	81. 31. 55,48	B.
	Egeria.....	0. 53,6	52,2	52,4	51,7	47,0	46,7			+3	97. 10. 51,13	29,922	45,4	38,3	35,56	68. 33. 22,12	B.
Apr.25	Zenith Point ....	0. 32,8	32,1	31,0	30,6	26,0	28,8		10,860		66. 25. 12,47						B.
	Zenith Point ....	4. 64,6	64,4	62,8	62,8	58,5	59,4		9,493		66. 25. 12,67						B.
	(e) Polaris.....	4. 42,7	41,7	43,3	40,5	37,0	37,0				30. 7. 41,55	29,962	47,3	55,3	42,41	1. 28. 54,57	B.
	(e) Polaris.....	...	...	...	...	...	...		10,142		30. 7. 41,84					1. 28. 54,86	B.
	(e) Polaris.....	...	...	...	...	...	...		10,409		30. 7. 41,19					1. 28. 54,21	B.
	(e) Polaris.....	...	...	...	...	...	...		11,384		30. 7. 40,79					1. 28. 53,81	B.
Apr.26	⊙ N.L.....	3. 13,1	15,6	12,6	14,5	10,6	10,3		13,135	+3	104. 42. 9,57	29,970	51,4	56,4	45,49	76. 4. 50,49	B.
	⊙ S.L.....	4. 60,4	62,6	57,4	61,8	56,4	64,7		13,135	+3	105. 13. 56,18				46,36	76. 36. 37,97	B.
	(f) ε Leonis R. ....	0. 30,6	29,6	27,7	26,5	25,4	27,3		11,183	-1 1/2	218. 40. 3,18	30,027	48,4	45,0	31,11	65. 32. 48,50	B.
	ε Leonis.....	0. 42,7	43,0	41,6	43,5	38,9	38,2		11,183	+1 1/2	94. 10. 17,03					65. 32. 43,57	B.
	(f)(g) Regulus R. ....	0. 42,3	42,0	38,9	39,4	37,5	38,6		13,509	+2 1/2	206. 54. 26,64				48,74	77. 18. 42,67	B.
	Regulus.....	2. 11,5	9,4	9,2	7,1	4,3	5,3			+4	105. 55. 55,94					77. 18. 40,71	B.
	(d) Egeria.....	4. 52,6	51,7	51,6	52,6	47,0	48,8		9,900		97. 29. 52,76	30,036	43,3	40,0	36,02	68. 52. 24,21	B.
Apr.27	Zenith Point ....	2. 5,6	10,4	5,9	10,3	7,3	5,0	+9,4	12,806		112. 1. 9,57						C.
	N.L.....	1. 13,2	10,0	12,4	12,4	10,2	11,3		9,724	-2	144. 56. 22,41	30,110	48,3	49,0	38,07	70. 42. 58,91	B.
	N.L.....	...	...	...	...	...	...		9,621	-1	144. 56. 22,15					70. 42. 58,65	B.
	N.L.....	...	...	...	...	...	...		9,542		144. 56. 21,52					70. 42. 58,02	B.
	N.L.....	...	...	...	...	...	...		9,477	+1	144. 56. 20,70					70. 42. 57,20	B.
	N.L.....	...	...	...	...	...	...		9,394	+2	144. 56. 20,36					70. 42. 56,86	B.
	ν Leonis.....	4. 15,3	14,7	18,8	17,4	15,9	16,6				151. 4. 17,78				47,69	76. 51. 3,90	B.
	η Leonis.....	4. 20,6	19,2	24,6	22,7	20,3	21,4				146. 44. 22,83				40,74	72. 31. 2,00	B.
	(h) Egeria.....	0. 21,8	21,1	22,2	21,4	20,7	22,0				143. 15. 21,65	30,120	45,8	41,4	36,24	69. 1. 56,32	B.
	B. (w.) xi. 944....	3. 15,9	14,5	18,5	17,5	15,4	16,1		6,839		155. 19. 23,24				56,28	81. 6. 17,95	B.
	(a) Thetis.....	5. 1,3	2,1	2,4	4,2	2,5	4,2				155. 5. 2,78				55,81	80. 51. 57,02	B.
	(i) Flora.....	2. 60,0	57,5	62,6	60,9	60,0	59,3				154. 58. 0,98				55,58	80. 44. 54,99	B.
May 1	(k) ⊙ S.L.....	2. 25,3	23,5	24,5	25,2	22,2	22,7	+10,3	11,981		149. 16. 43,41	29,751	49,4	49,3	44,12	75. 3. 22,75	B.
	(a)(l) Egeria.....	0. 22,9	23,1	22,4	23,2	21,5	22,9				143. 55. 22,78	29,804	47,8	42,8	36,70	69. 41. 54,70	B.
	B. (w.) xi. 895 ..	3. 27,2	24,8	29,3	28,5	26,4	27,4				165. 18. 28,45				78,93	91. 5. 42,60	B.
	Flora.....	2. 49,8	47,3	51,3	50,3	49,3	48,5				154. 57. 50,40				54,84	80. 44. 40,46	B.
	η Virginis.....	3. 30,8	28,6	32,5	31,6	27,6	29,7				164. 3. 31,32	29,803	47,8	42,0	75,59	89. 50. 42,13	B.
	(m) N.L.....	1. 37,6	36,6	39,6	39,0	38,5	37,7		9,681	-2	165. 16. 53,78				79,00	91. 4. 8,00	B.
	N.L.....	...	...	...	...	...	...		9,439	-1	165. 16. 54,63					91. 4. 8,85	B.
	N.L.....	...	...	...	...	...	...		9,243		165. 16. 54,50					91. 4. 8,72	B.
	N.L.....	...	...	...	...	...	...		9,035	+1	165. 16. 54,63					91. 4. 8,85	B.
	N.L.....	...	...	...	...	...	...		8,863	+2	165. 16. 54,00					91. 4. 8,22	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6. ASSUMED CO-LATITUDE = 37°. 47'. 30".

April 27, 4<sup>h</sup>. The Circle was taken from the wall to clean the axis, the Telescope was shifted, and the Microscopes were adjusted. Also the distance of the wire-frame from the object-glass was adjusted, and the collimation error was corrected. April 27, 10<sup>h</sup>—11<sup>h</sup>. The micrometer wire was adjusted equatorially.

(a) Very faint. (b) The Limb was of the last degree of faintness and scarcely full: the observation was extremely doubtful. (c) Cumuli clouds passing. (d) Negative correction for Runs. (e) Times of bisection by Molyneux, 1<sup>h</sup>. 7<sup>m</sup>. 5<sup>s</sup>, 1<sup>h</sup>. 13<sup>m</sup>. 16<sup>s</sup>, 1<sup>h</sup>. 17<sup>m</sup>. 51<sup>s</sup>, 1<sup>h</sup>. 28<sup>m</sup>. 37<sup>s</sup>. Molyneux fast on Hardy, 59<sup>m</sup>. 7<sup>s</sup>. (f) The mercury very tremulous. (g) Violent wind. (h) 'Good.' (i) Hurried observation. (k) Without the dark glass: N.L. hid by cloud. (l) 'No object near this.' (m) Steady but rugged.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.		
		A	B	C	D	E	F						Int.	Ext.		"	"	"		"	"
		"	"	"	"	"	"						"	"							
May 3	(a) ☉ N.L. ....	4. 52,0	51,8	50,4	53,5	49,4	50,8	+10,3	11,088		148. 9. 28,58	30,070	46,4	50,1	42,78	73. 56. 6,58	B.				
	☉ S.L. ....	1. 36,0	36,8	37,0	36,7	34,4	34,6		11,088		148. 41. 13,78				43,61	74. 27. 52,61	B.				
	(b) B. (w.) x. 964...	0. 27,5	27,4	26,4	30,2	26,4	28,1				158. 5. 27,82	30,126	46,7	41,7	61,95	83. 52. 24,99	B.				
	B. (w.) x. 1058..	1. 10,3	9,6	7,7	11,5	8,9	9,8				161. 1. 10,03				68,63	86. 48. 13,88	B.				
	B. (w.) xi. 77...	3. 12,2	10,6	13,0	13,5	11,7	12,0				155. 28. 13,27				56,54	81. 15. 5,03	B.				
	(c) B. (w) xi. 142..	3. 43,4	41,5	45,0	45,8	44,4	43,9				164. 28. 45,27				77,60	90. 15. 58,09	B.				
	H. C. 21626.....	3. 57,7	55,3	58,9	57,8	57,1	55,7				160. 58. 58,43				68,54	86. 46. 2,19	B.				
	B. (w.) xi. 312..	1. 32,6	30,6	32,9	33,5	32,5	33,2				165. 31. 33,07				80,59	91. 18. 48,88	B.				
	(d) Egeria.....	1. 17,2	16,8	18,0	17,8	15,4	16,4				144. 16. 17,38				37,69	70. 2. 50,29	B.				
	Flora.....	4. 3,0	0,1	4,4	3,3	1,2	1,3		10,873		154. 58. 45,40				55,96	80. 45. 36,58	B.				
	(e) α <sup>2</sup> Libræ.....	2. 7,7	3,7	8,3	9,0	5,2	6,4				179. 37. 7,43	30,140	41,5	32,6	146,84	105. 25. 29,49	B.				
	ξ <sup>2</sup> Libræ.....	0. 43,0	38,3	42,1	43,6	40,2	42,1				175. 0. 41,78				119,01	100. 48. 36,01	B.				
	(f) ) N.L. ....	1. 38,4	34,3	39,4	38,2	35,8	35,9			-2	177. 6. 44,87				130,52	102. 54. 50,61	B.				
	) N.L. ....	...	...	...	...	...	...		9,847	-1	177. 6. 44,43					102. 54. 50,17	B.				
	) N.L. ....	...	...	...	...	...	...		9,671		177. 6. 44,41					102. 54. 50,15	B.				
	) N.L. ....	...	...	...	...	...	...		9,463	+1	177. 6. 44,98					102. 54. 50,72	B.				
	) N.L. ....	...	...	...	...	...	...		9,282	+2	177. 6. 44,92					102. 54. 50,66	B.				
	Zenith Point....	1. 25,9	24,3	25,3	26,1	20,7	23,8		10,578		112. 1. 12,78							B.			
May 4	(g) ☉ S.L. ....	3. 50,8	49,9	54,4	51,7	50,4	52,7		10,326	+4	148. 23. 47,68	30,144	46,0	50,4	43,23	74. 10. 26,13	B.				
	(h) B. (w.) xi. 312..	1. 31,7	32,0	34,2	36,5	33,9	34,7				165. 31. 34,37	30,156	46,4	42,2	80,59	91. 18. 50,18	B.				
	(i) Flora.....	4. 30,8	30,7	35,0	34,2	32,4	32,0				154. 59. 34,07	30,156	45,0	39,3	55,94	80. 46. 25,23	B.				
	B. (w.) xii. 249..	0. 12,6	11,2	12,3	15,4	11,4	14,0				169. 10. 12,88				92,83	94. 57. 40,93	B.				
	(k) B. (w.) xii. 332..	4. 12,8	10,0	15,5	14,2	11,1	12,0				168. 4. 14,05				89,06	93. 51. 38,33	B.				
	B. (w.) xii. 414..	2. 57,6	56,0	60,3	60,2	56,8	57,9				167. 32. 59,13				87,34	93. 20. 21,69	B.				
	B. (w.) xii. 474..	1. 52,4	50,5	52,9	53,3	51,4	52,2				172. 26. 52,75				105,56	98. 14. 33,53	B.				
	B. (w.) xii. 523..	3. 39,9	37,0	43,2	40,8	38,6	40,7				171. 18. 41,28				100,87	97. 6. 17,37	B.				
	B. (w.) xii. 569..	4. 3,3	0,3	8,3	5,1	2,0	3,3				166. 9. 5,10				82,95	91. 56. 23,27	B.				
	B. (w.) xii. 677..	2. 30,3	27,1	31,7	31,9	28,3	30,4				169. 17. 30,82				93,27	95. 4. 59,31	B.				
	(l) H. C. 23948.....	4. 13,7	8,0	16,8	13,6	10,3	13,4				173. 44. 14,07				111,27	99. 32. 0,56	B.				
	η Libræ.....	3. 32,2	27,8	35,5	32,4	30,1	30,7				179. 23. 32,65	30,168	41,3	34,3	144,84	105. 11. 52,74	B.				
	(m) θ Libræ.....	3. 58,2	53,8	61,3	58,2	55,7	55,4				180. 28. 58,45				152,86	106. 17. 26,53	B.				
	(n) ) S.L. ....	3. 18,7	14,3	21,9	18,8	16,9	18,2			-2	182. 28. 25,17				169,63	108. 17. 10,02	B.				
	) S.L. ....	...	...	...	...	...	...		9,951	-1	182. 28. 23,29					108. 17. 8,14	B.				
	) S.L. ....	...	...	...	...	...	...		9,748		182. 28. 24,53					108. 17. 9,38	B.				
	) S.L. ....	...	...	...	...	...	...		9,625	+1	182. 28. 24,01					108. 17. 8,86	B.				
	) S.L. ....	...	...	...	...	...	...		9,494	+2	182. 28. 23,54					108. 17. 8,39	B.				
May 5	(o) B. (w.) xi. 206..	3. 56,9	56,0	59,3	57,6	57,2	55,5				160. 58. 58,43	30,207	47,4	44,4	68,34	86. 46. 1,99	B.				
	(p) Polaris .....	3. 36,5	32,5	36,9	35,6	33,8	32,4		9,723		75. 43. 45,49	30,064	49,4	57,4	42,37	1. 28. 58,34	B.				
	(p) Polaris .....	...	...	...	...	...	...		9,562		75. 43. 45,14					1. 28. 57,99	B.				
May 7	☉ N.L. ....	3. 50,9	50,3	50,9	49,8	50,3	50,7		16,721		147. 1. 31,63	30,042	51,0	62,3	39,99	72. 48. 6,84	B.				
	☉ S.L. ....	0. 37,0	37,8	33,6	36,0	35,5	37,8		16,721		147. 33. 16,33				40,78	73. 19. 52,33	B.				
May 12	(q) Serpentis.....	2. 18,8	14,8	20,0	15,4	16,2	17,8	+13,1	9,924		151. 7. 19,75	29,642	49,4	47,2	47,21	76. 54. 2,21	B.				
May 14	B. (w.) xi. 959...	0. 11,5	10,6	11,3	9,4	10,9	12,9				165. 50. 11,18	29,828	53,5	51,5	79,09	91. 37. 25,52	B.				
	B. (w.) xii. 44...	3. 33,4	29,7	33,8	30,6	32,0	31,6				169. 18. 33,38				90,02	95. 5. 58,65	B.				
	B. (w.) xii. 121..	1. 10,0	7,8	9,2	6,8	8,4	8,1				170. 51. 8,88				95,55	96. 38. 39,68	B.				
	B. (w.) xii. 128..	0. 4,7	5,0	5,2	4,3	5,3	5,7				170. 55. 5,07				95,79	96. 42. 36,11	B.				
	(r) Polaris .....	3. 49,0	42,7	49,0	41,6	46,4	44,4		10,017		75. 43. 46,81	30,027	52,7	58,8	42,20	1. 28. 59,86	B.				
	(r) Polaris .....	...	...	...	...	...	...		10,188		75. 43. 47,91					1. 29. 0,96	B.				
	(r) Polaris .....	...	...	...	...	...	...		11,277		75. 43. 47,07					1. 29. 0,12	B.				
May 15	☉ S.L. ....	0. 46,4	46,0	44,3	43,3	45,3	44,3		8,948		145. 31. 7,19	30,020	55,8	62,0	37,79	71. 17. 40,23	B.				
	☉ N.L. ....	4. 5,2	3,1	6,6	2,4	2,8	1,4		8,948		144. 59. 27,27				37,04	70. 45. 59,56	B.				
	B. (w.) xii. 772..	1. 62,9	59,1	62,2	58,5	61,7	59,1				167. 32. 1,45	29,976	53,3	48,9	85,06	93. 19. 21,76	B.				
	B. (w.) xii. 912..	3. 33,0	30,2	35,5	29,4	32,2	31,2				165. 58. 33,45				80,32	91. 45. 49,02	B.				

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) Strong day-light. (c) Very faint. (d) Extremely faint. (e) Cloudy. (f) Tremor, and clouds passing.  
 (g) Very much clouded and bisected doubtfully: N.L. could not be taken. (h) Doubtful observation. (i) Very faint from cloud.  
 (k) Cloudy. 'A' brighter of less N.P.D. preceded 10". (l) 'A' north-preceding companion of Mag. 9.10. (m) Flaring. (n) Unsteady and rough: several eminences noticed.  
 (o) The evening cloudy. (p) Times by Molyneux, 0<sup>h</sup>. 56<sup>m</sup>. 20<sup>s</sup> and 1<sup>h</sup>. 3<sup>m</sup>. 14<sup>s</sup>. Molyneux fast on Hardy, 1<sup>m</sup>. 26<sup>s</sup>.  
 (q) Much clouded. (r) Times by Molyneux, 1<sup>h</sup>. 5<sup>m</sup>. 23<sup>s</sup>, 1<sup>h</sup>. 14<sup>m</sup>. 48<sup>s</sup>, 1<sup>h</sup>. 28<sup>m</sup>. 4<sup>s</sup>. Molyneux fast on Hardy, 1<sup>m</sup>. 32<sup>s</sup>.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
May 15	(a) Polaris SP. R...	1.29,0	26,8	28,0	25,5	27,4	28,1	+13,1	9,806		331.16.32,53	29,976	53,3	48,9	47,83	-1.28.59,61		B.	
	(a) Polaris SP.....	0.50,0	48,3	48,3	44,3	49,1	47,4		9,806		72.45.52,28					-1.29.0,30		B.	
	(a) Polaris SP. R...	1.23,7	20,7	21,4	19,2	20,5	21,7		9,608		331.16.31,44					-1.28.58,52		B.	
	(a) Polaris SP. ....	0.49,0	47,0	47,6	43,4	48,4	46,3		9,608		72.45.52,48					-1.29.0,10		B.	
	(b) B. (w.) XIII. 391.	1.59,8	56,2	59,5	55,5	57,5	58,3				173.41.58,65				108,20	99.29.42,10		B.	
May 18	⊙ N.L.....	2.26,8	27,0	27,8	24,1	26,7	24,2		6,013		144.18.50,29	29,613	60,4	66,2	35,31	70.5.20,85		B.	
	⊙ S.L.....	4.5,7	4,0	7,6	2,5	5,8	2,2		6,013		144.50.29,54				36,03	70.37.0,82		B.	
May 19	⊙ S.L.....	2.23,8	24,5	25,0	22,7	25,3	22,3		9,519		144.37.35,00	29,818	59,2	63,4	36,18	70.24.6,43		B.	
	⊙ N.L.....	0.46,0	45,2	44,2	41,6	46,2	41,7		9,519		144.5.54,50				35,45	69.52.25,20		B.	
	Zenith Point....	1.41,6	37,4	36,6	35,3	35,1	36,2		11,198		112.1.12,75							B.	
	(c) B. (w.) XIII. 37...	4.54,6	51,7	57,0	52,4	56,0	50,7				172.59.55,87	29,915	57,5	50,8	104,56	98.47.35,68		B.	
	B. (w.) XIII. 163.	1.61,0	58,5	60,5	59,2	61,0	60,2				175.32.0,93				116,31	101.19.52,49		B.	
	B. (w.) XIII. 305.	1.43,6	40,4	41,9	39,8	43,7	41,8				174.1.42,60				109,10	99.49.26,95		B.	
	B. (w.) XIII. 391.	1.60,3	57,0	59,5	56,2	59,4	57,3				173.41.59,15				107,61	99.29.42,01		B.	
	H. C. 25180.....	2.37,0	35,3	36,2	33,8	36,8	34,2				172.32.36,67				102,64	98.20.14,56		B.	
	B. (w.) XIII. 605.	4.25,8	22,2	26,8	22,2	26,4	22,6				173.4.26,23				104,88	98.52.6,36		B.	
	ν Virginis.....	3.21,0	19,0	23,3	19,1	22,0	18,2				170.18.21,90				93,94	96.5.51,09		B.	
	(d) B. (w.) XIII. 801.	1.29,2	27,8	28,8	25,9	30,1	27,0				177.41.28,77				128,05	103.29.32,07		B.	
	Metis.....	1.55,1	53,2	55,4	52,3	54,5	52,7				187.31.54,68	29,932	53,5	46,2	223,76	113.21.33,69		B.	
May 24	⊙ S.L.....	3.11,3	8,7	11,5	8,1	8,9	7,6	+6,3	9,822		143.38.13,73	30,008	53,0	54,0	35,71	69.24.45,09		B.	
	⊙ N.L.....	1.35,9	33,0	34,2	30,8	32,6	30,9		9,822		143.6.36,93				34,98	68.53.7,56		B.	
May 31	Zenith Point....	1.51,6	48,5	49,2	46,6	47,4	47,7		11,752		112.1.12,35							B.	
	⊙ N.L.....	3.38,0	33,7	39,0	35,3	36,0	34,9		11,082	-2	179.38.20,99	29,780	46,1	43,2	142,03	105.26.38,67		B.	
	⊙ N.L.....	...	...	...	...	...	...		10,936	-1	179.38.20,75					105.26.38,43		B.	
	⊙ N.L.....	...	...	...	...	...	...		10,794		179.38.20,34					105.26.38,02		B.	
	⊙ N.L.....	...	...	...	...	...	...		10,631	+1	179.38.20,29					105.26.37,97		B.	
	⊙ N.L.....	...	...	...	...	...	...		10,472	+2	179.38.20,09					105.26.37,77		B.	
	(e) β <sup>2</sup> Scorpii.....	4.58,1	56,6	55,8	55,1	56,8	57,7		10,625		183.34.43,64	29,780	45,1	42,7	174,95	109.23.34,24		B.	
	β <sup>1</sup> Scorpii.....	...	...	...	...	...	...				183.34.56,67				174,98	109.23.47,30		B.	
	ν Scorpii.....	0.31,9	29,4	32,1	29,9	30,0	31,1				183.15.30,83				171,81	109.4.18,29		B.	
June 1	⊙ N.L.....	1.19,5	19,0	18,5	16,8	20,2	18,4		12,211	+1	141.50.33,06	29,804	54,9	57,5	32,80	67.37.1,51		B.	
	⊙ S.L.....	2.52,0	52,4	53,0	49,0	54,1	48,7		12,211	+2	142.22.6,47				33,50	68.8.35,62		B.	
June 4	⊙ S.L.....	0.26,0	26,6	25,7	24,1	26,5	24,8		11,617		141.59.51,98	29,710	56,7	61,7	32,62	67.46.20,25		B.	
	⊙ N.L.....	3.51,9	50,9	53,0	47,8	52,6	47,1		11,617		141.28.17,63				31,94	67.14.45,22		B.	
	H. C. 26541.....	3.18,3	15,0	18,0	15,7	16,0	16,4				183.3.17,25	29,824	53,1	52,0	166,86	108.51.59,76		B.	
	B. (w.) XIV. 607...	4.26,6	24,7	30,6	25,0	27,2	25,0				177.29.27,45				126,19	103.17.29,29		B.	
	B. (w.) XIV. 735...	2.3,0	2,0	3,9	2,1	3,2	2,0				175.57.3,12				117,80	101.44.56,57		B.	
	(f) H. C. 28560.....	3.60,1	57,6	61,2	57,7	60,4	58,0				186.44.0,00	29,836	51,4	50,2	209,48	112.33.25,13		B.	
	H. C. 28813.....	1.3,0	1,9	1,0	0,3	2,0	0,4				186.21.1,65				204,26	112.10.21,56		B.	
	(g) Metis.....	0.32,2	31,1	30,6	30,4	30,6	33,1		8,692		187.40.58,70	29,844	50,2	48,5	224,39	113.30.38,74		B.	
June 8	H. C. 26541.....	3.20,3	18,0	20,1	18,1	18,8	17,0	+7,3			183.3.19,52	29,634	61,0	59,5	163,28	108.51.59,40		B.	
	B. (w.) XIV. 607...	4.28,1	27,9	30,9	27,6	29,2	26,3				177.29.29,42				123,49	103.17.29,51		B.	
	B. (w.) XIV. 735...	2.5,0	2,9	4,9	2,2	4,9	1,0				175.57.3,97				115,28	101.44.55,85		B.	
	Metis.....	3.6,1	4,9	5,9	3,0	5,2	2,6		13,552	+3	187.41.50,69	29,634	59,0	56,4	219,43	113.31.26,72		B.	
June 14	Zenith Point....	1.25,9	22,9	22,0	20,7	19,7	20,8		10,524		112.1.11,40							B.	
June 15	(h) ψ Bootis R.....	1.58,0	53,5	56,1	53,7	54,8	53,1		14,053		267.20.30,82	29,528	55,0	52,8	26,30	62.28.14,88		B.	
	ψ Bootis.....	3.18,5	13,3	18,8	12,0	13,7	13,5		14,053		136.41.51,24					62.28.14,14		B.	
	(h) ρ Herculis sf. R...	1.36,2	34,6	35,9	32,5	33,1	32,2		12,418		277.5.44,03	29,520	53,0	52,0	15,28	52.42.50,65		B.	
	ρ Herculis sf. ...	2.32,2	26,5	32,9	25,7	26,8	25,2		12,418		126.56.38,40					52.42.50,28		B.	

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Times by Molyneux, 13<sup>h</sup>. 2<sup>m</sup>. 22<sup>s</sup>, 13<sup>h</sup>. 4<sup>m</sup>. 48<sup>s</sup>, 13<sup>h</sup>. 10<sup>m</sup>. 36<sup>s</sup>, 13<sup>h</sup>. 12<sup>m</sup>. 52<sup>s</sup>. Molyneux fast on Hardy, 1<sup>m</sup>. 33<sup>s</sup>. (b) After this observation I loosened the screws of the axis, the Circle moving stiffly. (c) Misty sky. (d) Faint from haze. (e) Negative correction for Runs. (f) Too faint. (g) Very faint, but the bisection not doubtful. (h) Cloudy.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
June 16	B.A.C. 5039.....	3. 40,6	37,2	41,2	36,9	38,2	36,4	+7,3			187. 53. 32,63	29,400	53,8	52,0	222,74	113. 43. 11,97		T.	
	H. C. 28062.....	0. 6,0	4,1	3,0	4,1	4,8	3,9				185. 35. 4,33								
	H. C. 28212.....	4. 6,3	1,3	7,0	3,3	3,6	0,9				184. 24. 4,72								
	B. (w.) xv. 472..	3. 53,5	49,0	54,8	50,0	52,6	49,0			178. 33. 52,42									
	H. C. 28453.....	2. 7,9	4,1	7,1	4,2	4,8	5,3			181. 22. 6,07									
	H. C. 28560.....	4. 9,0	4,7	9,0	5,9	7,0	4,3		+1 1/4	186. 44. 7,56	29,408	54,0	51,0	206,17	112. 33. 30,33		T.		
	(a) H. C. 28752.....	4. 5,3	0,9	4,6	1,4	2,5	0,4			187. 24. 3,50									
	B. (w.) xv. 845..	3. 8,4	5,0	9,6	5,5	7,1	5,0			178. 23. 7,52									
	H. C. 28966.....	0. 30,8	29,1	28,5	27,3	30,0	28,8		+2 1/4	186. 55. 28,88	29,398	53,2	50,5	22,05	58. 51. 4,92		T.		
	H. C. 29130.....	3. 26,2	22,0	25,9	22,5	23,0	22,0			183. 13. 24,42									
	ε Herculis R.....	2. 25,3	22,2	22,9	19,6	20,6	20,1		9,320	270. 57. 36,53									
	ε Herculis.....	4. 33,1	23,0	33,5	27,9	29,0	28,2		9,320	133. 4. 45,21	29,398	53,2	50,5	22,05	58. 51. 3,86		T.		
	(b) α Herculis R. ...	2. 45,0	41,1	42,6	40,1	41,6	41,0		9,620	254. 22. 50,47									
	α Herculis.....	4. 23,0	20,0	23,4	18,7	19,0	19,1		9,620	+4								149. 39. 30,14	
June 17	⊙ N.L.....	4. 18,6	15,1	18,0	14,2	15,4	13,1	+6,3	12,597		140. 33. 22,48	29,426	58,5	61,7	30,46	66. 19. 49,89		T.	
	⊙ S.L.....	0. 47,8	45,0	45,0	42,9	46,5	42,8		12,597		141. 4. 51,00								
June 21	Zenith Point. ....	1. 11,8	7,9	5,1	5,5	5,2	4,5		9,801		112. 1. 11,05							T.	
June 22	(c) ⊙ S.L.....	3. 8,6	4,8	6,1	3,7	4,2	1,1		12,678	+1 1/2	141. 2. 9,70	29,592	60,1	63,6	31,13	66. 48. 37,78		T.	
	⊙ N.L.....	1. 35,9	32,0	34,0	32,0	33,1	30,3		12,678	+3	140. 30. 37,92								
June 23	⊙ N.L.....	0. 47,5	48,1	46,9	46,2	48,4	45,6		11,351	+1	155. 0. 15,49	29,704	62,6	66,1	52,21	80. 47. 4,65		T.	
	⊙ N.L.....	...	...	...	...	...	...		11,240	+2	155. 0. 14,23								
June 24	(d) ⊙ N.L.....	2. 20,8	19,1	19,0	17,9	19,8	16,2		9,670	+2	140. 32. 26,39	29,944	62,1	66,6	30,68	66. 18. 54,02		T.	
	⊙ S.L.....	3. 51,8	47,0	51,1	46,3	48,9	44,7		9,670	+3	141. 3. 56,50								
	(a)(e) α Virginis.....	4. 51,0	51,0	47,6	48,5	51,2	48,5			+3	154. 39. 49,85	29,982	63,1	65,2	52,16	80. 26. 38,96		T.	
	(f) α Ophiuchi.....	2. 55,2	50,0	53,6	50,2	52,4	50,3				151. 32. 52,57								
	ζ Serpentis.....	3. 9,7	6,2	9,0	6,3	6,8	6,1				167. 53. 8,00	30,034	55,3	53,0	47,99	77. 19. 37,51		T.	
June 25	⊙ S.L.....	0. 58,7	57,0	55,9	55,1	56,4	54,2		11,362		141. 5. 28,00	29,960	62,2	69,0	31,25	66. 51. 56,20		T.	
	(e) ⊙ N.L.....	4. 28,8	27,4	23,4	24,2	26,9	25,5		11,362	+2	140. 33. 57,74								
June 29	(g) ⊙ N.L.....	1. 34,2	32,5	33,3	31,4	33,3	32,6		10,928	+1	185. 36. 11,75	29,660	59,4	57,3	190,77	111. 25. 19,47		B.	
	(g) ⊙ N.L.....	...	...	...	...	...	...		10,807	+2	185. 36. 12,06								
June 30	(h) H. C. 28966.....	0. 24,6	25,3	24,6	25,1	25,9	24,6	+7,2			186. 55. 25,12	29,862	59,4	56,3	209,69	112. 44. 50,86		B.	
	β' Scorpii.....	4. 60,2	61,0	59,6	59,7	60,9	59,8				183. 35. 0,20								
	(i) B.A.C. 5408.....	0. 30,4	30,4	29,9	30,3	30,0	30,7				182. 20. 30,40								
	H. C. 29906.....	2. 2,9	2,5	3,3	2,4	4,2	2,0				189. 17. 3,37	29,859	57,5	54,3	44,48	75. 26. 10,78		B.	
	H. C. 30248.....	0. 31,4	32,0	32,0	31,1	32,6	31,8				189. 55. 31,93								
	H. C. 30544.....	3. 25,9	25,0	27,7	25,8	25,5	24,0				188. 58. 26,47								
	α Herculis R. ...	2. 26,7	25,5	26,5	23,4	27,6	24,0		8,676	-2	254. 22. 53,65	29,859	57,5	54,3	44,48	75. 26. 10,78		B.	
	α Herculis.....	3. 60,5	58,0	61,4	57,7	58,7	57,0		8,676	+1	149. 39. 27,48								
	θ Ophiuchi.....	0. 44,9	43,4	43,9	42,4	45,3	41,6			+1 1/2	189. 0. 43,60								
	58 Ophiuchi.....	2. 8,2	6,4	8,2	6,7	7,4	6,1				185. 47. 7,67	29,876	56,5	53,0	221,71	113. 27. 24,03		B.	
	(k) ⊙ N.L.....	2. 50,9	50,1	53,3	49,5	51,5	47,9		10,316	-2	187. 37. 46,27								
	⊙ N.L.....	...	...	...	...	...	...		10,329	-1	187. 37. 45,25								
	⊙ N.L.....	...	...	...	...	...	...		10,305		187. 37. 44,86	29,860	55,0	51,4	102,97	98. 33. 34,86		B.	
	⊙ N.L.....	...	...	...	...	...	...		10,274	+1	187. 37. 44,50								
	⊙ N.L.....	...	...	...	...	...	...		10,198	+2	187. 37. 44,95								
	(l) Melpomene.....	0. 59,5	59,8	60,5	58,9	60,6	59,1		10,198		172. 45. 55,84	29,860	55,0	51,4	201,03	111. 57. 5,70		B.	
	σ Sagittarii.....	2. 50,4	46,8	49,8	46,1	49,9	44,7				186. 7. 48,62								
	π Sagittarii.....	0. 61,5	60,0	60,1	58,5	60,8	57,9				185. 26. 0,03								
July 1	⊙ N.L.....	2. 32,8	32,3	30,9	31,3	30,5	28,5		12,355	+3	140. 51. 42,96	29,991	60,4	64,3	31,28	66. 38. 10,29		B.	
	⊙ S.L.....	3. 60,8	58,5	61,5	57,0	59,7	54,9		12,355	+3	141. 23. 10,98								

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Very faint. (b) Both unsatisfactory, especially the reflection observation: water dripping from the shutters disturbed the mercury. (c) Delayed by clouds. (d) Great motion. (e) Negative correction for Runs. (f) 'Not good.' The Circle reading has been increased 1". (g) Very faint from thick cloud: the first bisection good, the other doubtful. (h) Faint from day-light. (i) 'H. C. 29460 was not visible though the sky was clear.' The N.P.D. of H. C. is 5' too small: see p. 397 of Vol. XVIII. (k) Very bad definition and excessive motion. (l) Bright.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
July 1	H. C. 28966....	0.26,0	25,7	24,4	25,1	26,8	25,2	+7,2			186.55.25,63	30,059	59,5	55,8	211,28	112.44.52,96	B.
	(a) H. C. 29130.....	3.21,1	18,6	21,8	19,4	20,1	18,8				183.13.20,77				168,43	109.2.5,25	B.
	H. C. 29306.....	3.25,3	22,9	27,2	22,7	24,8	22,4				181.43.25,03				155,25	107.31.56,33	B.
	(b) B.A.C. 5408....	0.27,7	27,0	26,9	25,9	27,7	26,7				182.20.27,08				160,45	108.9.3,58	B.
	(c) H. C. 29696.....	1.12,1	13,2	12,6	11,6	14,4	13,3				182.39.12,67				163,20	108.27.51,92	B.
	H. C. 29906.....	1.62,9	60,7	61,9	60,4	63,0	59,5				189.17.1,88				250,56	115.7.8,49	B.
	(d) Melpomene.....	1.27,4	24,9	30,0	25,9	27,2	24,2			+2 $\frac{3}{4}$	172.49.27,36	30,040	51,8	54,7	103,42	98.37.6,83	B.
July 2	(e) S.L.....	2.37,1	34,9	34,7	32,8	36,0	31,5		9,945		141.27.36,25	30,049	60,8	66,6	31,97	67.14.4,27	B.
	S.L.....	1.4,3	3,6	3,6	1,7	2,9	0,4		9,945	+3	140.56.4,55				31,29	66.42.31,89	B.
July 3	(f) S.L.....	1.8,0	7,4	4,3	5,7	6,2	2,9		10,626		141.0.52,97	30,117	62,7	72,8	31,08	66.47.20,10	B.
	S.L.....	2.35,3	34,4	34,0	32,4	34,1	30,4		10,626		141.32.20,98				31,75	67.18.48,78	B.
	(g) $\alpha$ Serpentis R....	2.26,9	24,6	22,1	23,3	24,3	23,0		8,300	+1	246.43.0,05	30,119	64,8	64,3	57,59	83.6.17,49	B.
	$\alpha$ Serpentis.....	3.45,4	43,9	45,6	42,4	47,3	42,4		8,300	+2 $\frac{1}{2}$	157.19.20,94					83.6.14,58	B.
	(h) Melpomene....	2.10,9	8,9	9,0	8,3	10,6	7,1				172.57.9,65	30,109	62,3	58,2	103,47	93.44.49,17	B.
	$\alpha^1$ Capricorni R....	1.4,4	5,9	3,3	3,4	4,6	3,1		5,124		226.52.46,04	30,102	60,0	54,8	124,75	102.57.38,66	B.
	$\alpha^1$ Capricorni....	0.7,8	9,0	7,5	7,9	11,0	6,3		11,610	+4	177.9.34,16					102.57.34,96	B.
	(i) $\alpha^2$ Capricorni R....	1.4,4	5,9	3,3	3,4	4,6	3,1		11,610		226.50.30,80				124,96	102.59.54,11	B.
	$\alpha^2$ Capricorni....	0.7,8	9,0	7,5	7,9	11,0	6,3		5,209	+4	177.11.47,63					102.59.48,64	B.
	July 5	(k) S.L.....	3.62,5	61,4	58,4	58,3	65,3	56,5		12,555		141.43.8,07	29,912	69,6	87,1	30,90	67.29.35,02
S.L.....		2.31,9	32,0	29,8	28,2	32,3	25,6		12,555		141.11.37,29				30,25	66.58.3,59	B.
$\epsilon$ Bootis R.....		0.43,9	38,0	35,8	37,4	37,7	38,5		9,207	-1	267.30.55,16	29,889	72,5	76,5	25,20	62.17.49,99	B.
$\epsilon$ Bootis.....		1.11,4	10,6	7,1	6,8	8,7	5,6		9,207	+1	136.31.25,25					62.17.46,50	B.
(c) H. C. 29696.....		4.21,5	21,6	16,6	19,5	20,4	20,5				182.39.19,85	29,884	71,6	71,8	157,13	108.27.53,03	B.
July 6	(l) Melpomene.....	0.36,5	36,4	32,4	34,4	36,2	34,2			+4	173.5.34,65	29,860	68,6	66,2	101,56	98.53.12,26	B.
	(l)(c) S.L.....	3.63,7	69,7	59,5	64,2	67,9	62,0				141.49.4,28	29,860	72,6	85,4	31,07	67.35.31,40	B.
	H. C. 29136.....	0.63,6	62,8	59,4	61,8	63,5	59,6				188.46.2,02	29,914	71,7	69,2	233,22	114.35.51,29	B.
	(m) Antares R.....	1.13,9	11,4	7,5	8,6	11,4	7,6		8,471		213.46.42,23				262,41	116.6.0,13	B.
	Antares.....	0.9,6	8,3	4,5	6,4	9,2	4,6		8,471	+2 $\frac{1}{2}$	190.15.38,54					116.5.57,00	B.
July 7	(c)(l)(n) Melpomene...	4.45,0	46,5	41,4	44,4	47,5	43,3		9,625	+4	173.9.51,93	29,917	70,4	63,8	102,54	98.57.30,51	B.
	(c) S.L.....	4.45,4	46,2	38,9	38,6	45,0	39,0		11,986		141.24.0,69	29,994	71,3	78,6	31,09	67.10.27,83	B.
	S.L.....	1.10,0	10,5	7,4	7,3	12,1	4,6		11,986		141.55.27,52				31,76	67.41.55,33	B.
	Zenith Point....	1.12,4	9,6	7,4	6,3	6,4	2,2		9,794		112.1.11,95						
	(o) H. C. 29136.....	0.58,5	56,9	54,7	56,3	57,1	54,5				188.45.56,55	30,032	69,2	62,7	237,22	114.35.49,82	B.
	(c) H. C. 29372.....	4.56,2	55,4	52,3	54,0	55,0	52,0				183.14.54,12				166,17	109.3.36,34	B.
	B.A.C. 5408.....	0.32,6	31,8	28,4	31,3	31,5	30,6				182.20.31,15				158,08	108.9.5,28	B.
	(p) Antares R.....	1.22,4	20,4	16,1	18,4	19,2	18,3		8,697	-1	213.46.46,69				266,93	116.6.0,19	B.
	Antares.....	0.12,2	7,8	3,7	6,4	7,1	4,9		8,697		190.15.34,20					116.5.57,18	B.
	(q) Melpomene.....	4.23,5	24,6	21,2	22,4	23,8	21,8				173.14.23,98	30,029	65,8	57,8	104,50	99.2.4,48	B.
July 8	(r) S.L.....	3.17,6	14,7	17,3	14,1	16,9	12,1		12,957		142.2.14,57	30,040	69,4	80,2	31,86	67.48.42,48	B.
	S.L.....	1.45,0	43,4	42,8	40,6	44,0	39,6		12,957		141.30.41,31				31,19	67.17.8,55	B.
	(r) Antares R.....	1.49,0	46,4	43,2	44,5	45,9	43,9		9,909		213.46.47,80	30,043	69,0	65,0	265,77	116.5.57,92	B.
	Antares.....	0.36,9	35,3	32,8	35,2	34,7	33,7		9,909	+2 $\frac{1}{4}$	190.15.36,42					116.5.58,25	B.
	Melpomene.....	4.6,0	6,0	1,7	4,4	4,7	2,0				173.19.5,12	30,048	67,0	61,4	104,14	99.6.45,31	B.
July 9	(s) S.L.....	3.15,1	11,8	12,9	10,2	13,2	7,5		10,948		141.37.52,78	29,988	71,4	83,5	31,09	67.24.19,92	B.
	(c) S.L.....	4.44,8	45,2	39,7	42,0	44,5	39,2		10,948		142.9.22,71				31,75	67.55.50,51	B.
	Melpomene.....	3.53,6	50,0	51,5	50,6	51,7	48,0		9,934		173.23.52,84	29,988	70,7	67,2	103,07	99.11.31,96	B.
July 10	(t) S.L.....	2.15,5	13,4	13,6	13,0	13,2	10,6	+6,0	10,940		142.16.54,05	30,088	70,6	71,3	32,79	68.3.22,04	B.
	S.L.....	0.47,3	42,9	41,4	42,2	43,9	40,6		10,940		141.45.23,60				32,10	67.31.50,90	B.
	(u) Melpomene.....	3.24,0	18,8	22,3	19,1	18,5	17,5		9,908		173.28.22,62	30,120	63,1	54,6	106,51	99.16.4,33	B.
July 12	(x) S.L.....	2.14,1	13,2	12,1	11,4	13,0	8,6		11,698		142.1.37,09	30,097	67,6	72,5	32,39	67.48.4,68	B.
	S.L.....	3.43,3	41,2	42,2	39,5	42,3	36,7		11,698		142.33.6,19				33,08	68.19.34,47	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Faint from day-light. (b) Clouds passing. (c) Negative correction for Runs. (d) 'Good bisection.' (e) S.L. well bisected; the other was densely clouded. (f) Great motion. (g) The mercury disturbed by a cart passing. (h) Estimated of Mag. 9: a star of Mag. 8 followed. (i) 'Good.' (j) Not sharply defined. (k) Taken hurriedly after the Transit observation. (m) 'Pretty good image.' (n) 'The Planet was fully of Mag. 9.' (o) The pointer reading has been decreased 10'. (p) Very bad definition. (q) Bright: another object north-following. (r) Very great motion. (s) Unsteadiness and bad definition. (t) Unsteady. (u) Mist and cloud. (x) Too unsteady for accurate bisection: S.L. the best.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.		
		A	B	C	D	E	F						Int.	Ext.				
		"	"	"	"	"	"						Inch.	"		"	"	"
July 12	Arcturus R.....	1.14,3	10,8	10,1	10,5	10,5	10,9	6,0	9,622	+1 1/2	259.46.19,18	30,078	69,6	70,4	35,50	70.2.37,12	B	
	Arcturus.....	0.56,4	55,0	52,4	43,7	54,9	51,7		9,622	+4	144.16.2,94					70.2.33,64	B	
	(a) Antares R.....	1.27,8	24,5	20,8	23,2	24,0	22,6		8,857	-1 1/2	213.46.48,09	30,104	67,5	61,8	268,07	116.6.0,78	B	
	Antares.....	0.12,5	11,0	8,4	9,9	9,9	8,4		8,857	+1 1/2	190.15.33,72					116.5.56,99	B	
	Melpomene.....	4.20,4	19,4	16,6	18,4	18,7	17,3				173.39.19,33	30,093	64,3	58,3	106,42	99.27.0,95	B	
July 13	(b) ☉ S.L.....	1.26,6	25,6	22,7	22,9	23,0	19,4		8,880		142.41.46,98	30,069	67,2	77,7	32,90	68.28.15,08	B.	
	(c) ☉ N.L.....	4.53,0	52,3	49,4	50,2	52,3	46,9		8,880		142.10.14,00				32,22	67.56.41,42	B	
	Zenith Point....	1.22,8	18,6	17,0	17,4	15,8	16,7		10,265		112.1.12,80						B	
July 14	α Serpentis R....	2.49,4	45,2	44,6	45,3	44,4	44,3		9,221	-1	246.43.2,30	29,956	67,8	66,1	57,07	83.6.15,57	B.	
	α Serpentis.....	4.5,1	2,2	4,2	3,4	4,1	2,3		9,221	+2	157.19.20,68					83.6.12,95	B.	
July 15	(d) ☉ S.L.....	0.27,2	25,3	21,9	23,3	23,4	25,4		10,503	+4	143.0.14,47	29,912	69,3	76,2	33,23	68.46.42,90	B.	
	Melpomene.....	0.55,0	53,3	50,9	53,4	53,0	51,3				173.55.53,00	29,900	69,7	66,7	105,17	99.43.33,37	B.	
July 16	(e) ☉ N.L.....	0.14,4	14,3	11,1	12,2	12,6	5,8		14,941		142.38.28,75	29,878	70,3	78,6	32,56	68.24.56,51	B.	
	☉ S.L.....	1.44,7	43,4	41,4	41,5	42,6	40,4		14,941		143.9.59,64				33,25	68.56.28,09	B.	
July 19	Zenith Point....	1.14,6	9,6	6,8	8,0	4,9	6,2	+5,5	9,794		112.1.12,85						T.	
	ρ Herculis R. ...	0.19,5	16,9	13,9	16,0	13,6	11,7		8,163		277.5.53,61	29,994	64,0	63,3	15,17	52.42.42,41	T.	
	ρ Herculis.....	0.56,3	50,8	49,6	49,9	49,0	48,5		8,163	+2 1/2	126.56.29,85					52.42.40,17	T.	
	(c) ξ Serpentis....	4.49,6	46,6	44,9	45,2	44,9	44,8				179.29.45,97				136,32	105.17.57,44	T.	
	H. C. 32386.....	0.62,2	57,1	56,9	56,0	56,5	55,0				137.35.57,43				27,25	63.22.19,83	T.	
	(c) B.A.C. 6035....	4.15,7	13,0	9,9	12,6	10,9	13,0				154.19.12,37	30,000	63,5	61,7	51,93	80.5.59,45	T.	
	(c)(a) Melpomene ...	4.49,0	44,6	43,5	44,9	45,3	44,7		10,040		174.19.44,47				108,37	100.7.27,99	T.	
	o Herculis R. ...	3.46,5	42,0	43,7	41,5	41,1	39,0		10,230		268.33.38,18				24,79	61.15.7,46	T.	
	o Herculis.....	3.52,8	45,8	48,9	46,0	45,4	45,7		10,230	+2	135.28.43,66					61.15.3,60	T.	
	(f) δ Ursæ Minoris R	3.63,0	58,1	61,0	59,7	59,0	57,1		10,658		326.23.46,34	30,004	64,0	60,4	39,17	3.23.55,34	T.	
	(f) δ Ursæ Minoris R	...	...	...	...	...	...		10,760		326.23.44,41					3.23.57,27	T.	
	(f) δ Ursæ Minoris R	...	...	...	...	...	...		10,727		326.23.44,66					3.23.57,02	T.	
	(f) δ Ursæ Minoris R	3.55,5	50,0	53,2	52,1	51,1	49,0		10,275		326.23.43,60					3.23.58,08	T.	
	(f) δ Ursæ Minoris R	...	...	...	...	...	...		10,210		326.23.44,42					3.23.57,26	T.	
	(g) δ Ursæ Minoris..	3.65,8	57,5	60,7	60,0	57,3	57,4		11,496		77.38.29,25					3.23.55,23	T.	
	(g) δ Ursæ Minoris..	...	...	...	...	...	...		11,655		77.38.39,01					3.23.54,99	T.	
July 20	(h) ☉ N.L.....	3.17,8	13,7	15,5	14,1	12,0	12,1		11,966	-1	153.22.37,43	30,016	69,2	73,0	49,16	79.9.21,74	T.	
	☉ N.L.....	...	...	...	...	...	...		11,857		153.22.36,08					79.9.20,39	T.	
	☉ N.L.....	...	...	...	...	...	...		11,702	+1	153.22.35,75					79.9.20,06	T.	
	☉ N.L.....	...	...	...	...	...	...		11,523	+2	153.22.35,98					79.9.20,29	T.	
July 21	(i) (c) ☉ S.L.....	4.63,0	62,2	58,9	59,7	60,2	57,0		12,112		144.4.16,13	29,949	70,0	72,0	34,97	69.50.46,25	T.	
	☉ N.L.....	3.31,2	26,2	29,9	26,2	26,6	24,0		12,112		143.32.43,94				34,26	69.19.13,35	T.	
	(k) B.A.C. 6027.....	2.47,5	42,1	43,5	43,2	43,6	42,2				187.2.44,18	30,020	65,2	62,6	209,81	112.52.9,14	T.	
	κ Cephei R.....	4.15,6	9,9	13,8	10,0	9,0	6,5		11,181	+1 1/2	317.3.46,77	30,026	61,1	60,0	26,80	12.44.7,28	T.	
	κ Cephei.....	4.10,6	2,6	6,2	3,1	0,7	0,7		11,181	+1 1/2	86.58.41,58					12.44.9,93	T.	
July 22	(l) ☉ N.L.....	0.18,0	19,3	14,9	17,4	16,4	14,9		11,888		143.44.37,50	30,028	67,7	71,7	34,64	69.31.7,29	B.	
	☉ S.L.....	1.51,2	47,9	46,6	46,1	48,2	42,4		11,888		144.16.8,01				35,35	70.2.38,51	B.	
	☉ N.L.....	1.49,6	47,3	47,6	46,9	48,1	44,6		9,733	-2	164.42.1,23	30,069	70,0	72,2	73,41	90.29.9,79	B.	
	☉ N.L.....	...	...	...	...	...	...		9,581	-1	164.42.0,41					90.29.8,97	B.	
	☉ N.L.....	...	...	...	...	...	...		9,353		164.42.1,16					90.29.9,72	B.	
	☉ N.L.....	...	...	...	...	...	...		9,161	+1	164.42.1,17					90.29.9,73	B.	
	☉ N.L.....	...	...	...	...	...	...		8,945	+2	164.42.1,68					90.29.10,24	B.	
	B.A.C. 6023.....	4.23,3	21,6	23,4	22,7	22,2	20,3				188.19.23,05	30,124	63,4	57,5	232,74	114.9.10,94	B.	
	(m) Melpomene.....	3.43,8	41,6	42,3	42,4	42,5	38,6				174.38.42,55				111,21	100.26.28,91	B.	
	B.A.C. 6141.....	0.31,5	32,2	28,5	31,2	32,3	28,0				188.10.30,72				230,25	114.0.16,12	B.	
July 23	(n) ☉ S.L.....	3.22,5	21,5	22,0	21,7	20,5	18,7		9,940		144.28.22,95	30,124	65,5	72,2	35,71	70.14.53,81	B.	
	☉ N.L.....	1.50,5	49,5	46,9	47,4	48,5	45,0		9,940		143.56.49,55				34,99	69.43.19,69	B	

ONE REVOLUTION of the MICROMETER = 20'',852. ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8'',00.

(a) 'Good.' (b) Very great motion. (c) Negative correction for Runs. (d) Very uncertain: the observation was accidentally delayed.  
 (e) Unsteadiness and bad definition. (f) The mercury was unsteady during the first bisection, after which the south shutters were closed and the bisections were satisfactory. Times by Molyneux, 18.16<sup>m</sup>.40<sup>s</sup>, 19<sup>m</sup>.20<sup>s</sup>, 20<sup>m</sup>.31<sup>s</sup>, 23<sup>m</sup>.35<sup>s</sup>, 24<sup>m</sup>.0<sup>s</sup>. (g) The microscope readings are the means from two bisections. Times by Molyneux, 18<sup>m</sup>.27<sup>m</sup>.35<sup>s</sup>, 23<sup>m</sup>.55<sup>s</sup>. Molyneux slow by a circle transit of α Ophiuchi, 2<sup>m</sup>.2<sup>s</sup>. (h) Bisections quite doubtful, the Limb being very faint.  
 (i) Great motion. (k) Cloudy. (l) 'Very steady.' The micrometer reading has been increased 1'. (m) 'Easily observed.' (n) Serrated and unsteady.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.	
		A	B	C	D	E	F						Int.	Ext.		"	o	'		"
July 23	(a) N.L.....	1. 7,9	6,3	5,0	7,6	5,7	4,0	+5,5	10,760	-2	170. 30. 58,19	30,071	68,2	71,4	91,34	96. 18. 24,68	B.			
	(a) N.L.....	...	...	...	...	...	...		10,620	-1	170. 30. 57,24					96. 18. 23,73	B.			
	N.L.....	...	...	...	...	...	...		10,443		170. 30. 57,04					96. 18. 23,53	B.			
	N.L.....	...	...	...	...	...	...		10,293	+1	170. 30. 56,26					96. 18. 22,75	B.			
	N.L.....	...	...	...	...	...	...		10,108	+2	170. 30. 56,17					96. 18. 22,66	B.			
	(b) Melpomene.....	0. 16,6	15,6	13,6	15,9	14,6	13,9				174. 45. 15,07	30,087	66,3	60,8	110,85	100. 33. 1,07	B.			
	H. C. 36128.....	0. 42,7	41,5	39,1	41,3	41,1	39,6				183. 5. 41,00	30,080	64,2	59,3	166,00	108. 51. 22,15	B.			
	(c) H. C. 36504.....	1. 25,6	25,8	22,7	25,1	24,4	23,7				187. 1. 24,80				211,33	112. 50. 51,28	B.			
	(c) H. C. 36516.....	...	...	...	...	...	...		9,151		187. 1. 42,50				211,40	112. 51. 9,05	B.			
July 24	⊙ N.L.....	0. 14,4	17,0	10,6	3,9	12,5	10,2		12,304		144. 9. 23,43	29,974	66,7	74,5	34,94	69. 55. 53,52	B.			
	⊙ S.L.....	1. 44,9	44,6	41,6	42,0	44,3	39,4		12,304		144. 40. 55,08				35,66	70. 27. 25,89	B.			
July 26	⊙ S.L.....	3. 16,2	13,9	14,9	13,1	13,0	9,7	+3,6	13,393		145. 7. 3,10	29,630	68,1	72,0	36,02	70. 53. 33,75	T.			
	⊙ N.L.....	1. 44,9	42,3	41,5	40,9	42,0	38,5		13,393		144. 35. 31,13				35,30	70. 22. 1,06	T.			
	N.L.....	2. 40,7	37,1	37,9	37,7	37,2	36,4		10,184		184. 32. 34,31	29,740	67,1	64,5	176,69	110. 21. 25,63	T.			
	N.L.....	...	...	...	...	...	...		10,030	+1	184. 32. 35,14					110. 21. 26,46	T.			
	N.L.....	...	...	...	...	...	...		9,903	+2	184. 32. 35,29					110. 21. 26,61	T.			
	α Lyræ R.....	3. 10,0	3,6	4,5	3,3	1,1	1,6		11,087		278. 27. 41,71	29,776	66,0	62,1	13,66	51. 20. 53,32	T.			
	α Lyræ.....	0. 9,1	6,1	5,0	5,3	3,0	2,0		11,087		125. 34. 42,43					51. 20. 50,72	T.			
July 27	⊙ N.L.....	3. 28,4	26,2	26,2	26,0	23,9	24,3		8,187		144. 40. 4,04	29,910	71,4	74,7	35,75	70. 35. 34,42	T.			
	(d) ⊙ S.L.....	4. 62,0	59,5	55,9	58,0	56,4	56,8		8,187		145. 20. 35,89				36,48	71. 7. 7,00	T.			
	η Ophiuchi R.....	2. 47,1	43,2	40,9	42,5	41,6	41,8		7,927		224. 18. 26,40	30,028	65,0	62,6	138,25	105. 32. 13,22	T.			
	η Ophiuchi.....	3. 15,2	12,9	13,7	13,9	12,8	11,5		7,927		179. 43. 56,95					105. 32. 9,83	T.			
	ν Serpentis.....	3. 32,9	30,0	32,0	29,5	30,8	28,6				176. 53. 31,05				121,02	102. 41. 26,70	T.			
	N.L.....	3. 4,9	2,0	2,5	2,6	3,1	1,0		10,371	-2	187. 2. 57,76	30,036	63,6	60,4	210,92	112. 52. 23,31	T.			
	N.L.....	...	...	...	...	...	...		10,336	-1	187. 2. 57,33					112. 52. 22,88	T.			
	N.L.....	...	...	...	...	...	...		10,271		187. 2. 57,40					112. 52. 22,95	T.			
	N.L.....	...	...	...	...	...	...		10,140	+1	187. 2. 58,72					112. 52. 24,27	T.			
	N.L.....	...	...	...	...	...	...		10,120	+2	187. 2. 57,62					112. 52. 23,17	T.			
	(e) Melpomene.....	3. 62,0	58,0	60,8	59,0	60,0	58,0		15,317		175. 12. 9,36				112,90	100. 59. 56,89	T.			
	μ <sup>1</sup> Sagittarii.....	1. 27,9	26,6	23,3	25,5	25,5	24,1				185. 16. 25,65	30,040	62,1	59,5	188,44	111. 5. 28,72	T.			
	(d) λ Sagittarii.....	4. 40,8	40,0	37,0	39,0	39,5	38,3				189. 39. 39,05				255,96	115. 29. 49,64	T.			
	(d) Sirius R.....	4. 60,3	56,9	54,6	54,4	55,6	53,3		10,240	+1	223. 19. 50,87	30,040	67,0	68,6	143,48	106. 30. 53,98	T.			
	Sirius.....	2. 44,1	39,1	40,7	39,6	38,9	37,4		10,240	+3	180. 42. 34,88					106. 30. 52,99	T.			
	July 28	(f) ⊙ S.L.....	3. 56,4	51,4	54,0	50,8	51,9	49,9		8,290		145. 34. 28,53	30,040	68,0	71,5	37,19	71. 21. 0,35	T.		
⊙ N.L.....		2. 23,1	18,2	19,7	18,4	17,7	16,0		8,290		145. 2. 54,79				36,46	70. 49. 25,88	T.			
(g) N.L.....		2. 26,0	22,6	23,6	23,7	21,0	20,5		8,612	+1	188. 37. 51,82	30,064	65,0	60,4	236,19	114. 27. 42,64	T.			
July 29	(h) Melpomene.....	2. 38,5	33,2	36,2	35,2	34,4	33,9		14,333	+4½	175. 26. 4,31	30,070	61,0	55,8	115,23	101. 13. 54,17	T.			
	(i) N.L.....	1. 7,7	3,0	4,0	2,9	2,8	2,2		8,782		188. 11. 29,30	30,084	57,0	53,0	232,36	114. 1. 16,29	T.			
	(i) N.L.....	...	...	...	...	...	...		8,648	+1	188. 11. 32,88					114. 1. 19,87	T.			
	(i) N.L.....	...	...	...	...	...	...		8,772	+2	188. 11. 30,97					114. 1. 17,96	T.			
July 30	(k) ⊙ N.L.....	2. 7,9	4,8	5,0	3,4	3,6	1,1		11,591		145. 31. 31,37	30,070	65,5	68,5	37,38	71. 18. 3,38	T.			
	⊙ S.L.....	3. 37,9	33,6	35,9	32,9	32,7	31,0		11,591		146. 3. 1,25				38,13	71. 49. 34,01	T.			
	(l) Melpomene.....	3. 8,2	5,0	7,1	6,1	4,0	4,3		9,846	+4½	175. 33. 8,40	30,070	63,0	60,0	114,83	101. 20. 57,86	T.			
	N.L.....	2. 35,1	30,5	31,7	29,7	29,8	28,0		9,092	-1	186. 22. 48,18	30,074	58,1	57,3	203,27	112. 12. 6,08	T.			
	N.L.....	...	...	...	...	...	...		9,181		186. 22. 48,18					112. 12. 6,08	T.			
July 31	N.L.....	...	...	...	...	...	...		9,284	+1	186. 22. 47,76					112. 12. 5,66	T.			
	N.L.....	...	...	...	...	...	...													
	N.L.....	...	...	...	...	...	...													
Aug. 2	⊙ S.L.....	3. 53,8	49,6	51,1	49,0	50,0	46,1		11,544		146. 48. 18,19	29,790	69,3	70,6	38,69	72. 34. 51,51	T.			
	⊙ N.L.....	2. 17,5	14,6	13,4	12,4	11,9	11,5		11,544		146. 16. 41,63				37,94	72. 3. 14,20	T.			

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Cloudy at these times. (b) Somewhat fainter but easily bisected. (c) 'Three stars forming an equilateral triangle.' The third is H. C. 36507.  
 (d) Negative correction for Runs. (e) The Planet bright and bisection considered good. (f) Fringed and boiling: accurate bisection impossible.  
 (g) Dense cloud: the observation hurried and uncertain. (h) On this and following days to Aug. 2 the same observer took the Transit observations.  
 (i) Unsteady. The first bisection hurried and quite uncertain. (k) Both Limbs very unsteady. (l) Uncertain observation, the illuminating lamp going out.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
Aug. 2	Zenith Point . . .	0.66,9	63,2	59,9	61,5	59,8	59,3	+3,6	9,449		112. 1. 13,37								T.
	(a) Melpomene . . .	1.28,2	25,4	24,8	26,0	24,9	23,4		15,199	-2	175.54.37,24	29,666	63,4	61,0	114,84	101.42.26,71			T.
Aug. 4	(b) ☉ N.L. . . . .	3.58,5	57,3	53,4	56,4	55,6	54,3		11,776		146.48.18,75	29,340	65,0	66,5	38,42	72.34.51,80			T.
	☉ S.L. . . . .	0.31,8	28,1	28,0	27,5	27,1	26,1		11,776		147.19.51,12				39,18	73.6.24,93			T.
	H. C. 32211 . . . .	1.51,8	47,0	47,7	46,1	47,0	44,9				187.26.47,63	29,388	56,6	54,4	214,70	113.16.16,96			T.
	Melpomene . . . .	4.12,1	4,8	10,7	7,4	6,3	5,4		9,929		176.9.9,76				116,54	101.57.0,93			T.
	B.A.C. 6158 . . . .	3.9,7	4,7	7,2	4,9	4,0	3,0				184.3.5,95	29,390		53,5	173,49	109.51.54,07			T.
	(c) δ Ursæ Minoris R.	2.62,1	57,3	59,8	58,3	58,1	55,0		7,647		326.23.47,82				38,90	3.23.54,75			T.
	(c) δ Ursæ Minoris..	2.53,3	46,9	48,9	47,3	45,5	46,1		7,647		77.38.37,44					3.23.53,17			T.
Aug. 5	H. C. 32271 . . . .	2.22,9	21,2	22,5	21,1	19,9	20,9				181.37.21,70	29,440	60,0	58,0	150,58	107.25.46,91			T.
	(d) Melpomene . . . .	1.31,4	29,1	30,5	29,9	28,1	28,0				176.16.29,68				116,51	102.4.20,82			T.
	(e) H. C. 32852 . . . .	2.17,0	13,8	13,5	12,3	13,9	12,9				186.32.14,17				200,77	112.21.29,57			T.
	H. C. 33089 . . . .	3.31,9	28,0	32,2	29,6	28,9	28,0				181.13.30,18				147,49	107.1.52,30			T.
	B.A.C. 6158 . . . .	3.8,2	4,0	6,5	3,7	3,9	3,0				184.3.5,25				172,19	109.51.52,07			T.
	16 Sagittarii . . . .	1.41,3	38,2	40,5	38,4	38,9	37,0				184.36.39,25				177,95	110.25.31,83			T.
	(f) δ Ursæ Minoris R.	3.37,0	34,1	37,0	34,0	35,0	31,5		9,239		326.23.50,11	29,448	60,0	56,0	38,79	3.23.52,47			T.
	(f) δ Ursæ Minoris..	3.20,3	15,5	17,3	16,0	14,0	15,3		9,239		77.38.35,93					3.23.51,77			T.
	(g) 51 (H.) Cephei sp. R.	3.62,5	59,0	62,6	58,9	59,5	56,0		14,481		332.32.28,40				48,44	-2.44.55,47			T.
	(g) 51 (Hev.) Cephei sp.	1.36,9	32,9	32,9	32,7	32,6	33,1		14,481		71.29.57,69					-2.44.56,12			T.
	(h) β Lyræ R. . . . .	0.45,3	44,7	42,0	42,0	41,0	39,8		10,522		273.0.31,66				19,54	56.48.9,25			T.
	β Lyræ . . . . .	2.8,1	1,2	4,2	1,6	0,3	0,0		10,522		131.1.51,93					56.48.6,10			T.
	α Cygni R. . . . .	3.16,0	9,9	13,4	9,3	8,0	9,0		8,022		284.33.52,57	29,442	57,2	54,0	7,45	45.14.36,25			T.
	(i) α Cygni . . . . .	2.57,1	51,5	53,0	50,6	49,8	48,0		8,022	+1½	119.28.33,48					45.14.35,56			T.
Aug. 6	(k)(b) Melpomene . . . .	4.29,9	27,0	25,9	26,4	26,2	25,0	+7,1	11,660		176.23.51,99	29,334	58,5	56,7	117,03	102.11.43,15			T.
	B.A.C. 6158 . . . .	3.9,1	3,9	7,0	4,7	5,0	4,1				184.3.6,35				172,02	109.51.52,50			T.
	H. C. 33516 . . . .	1.57,1	53,0	54,0	52,9	54,1	51,6				188.6.54,23				223,62	113.56.31,98			T.
	(l) δ Ursæ Minoris R.	3.37,2	32,7	35,5	32,7	33,8	31,4		9,213		326.23.51,12	29,334	59,0	56,7	38,58	3.23.52,17			T.
	(l) δ Ursæ Minoris..	3.24,0	17,8	18,9	18,2	16,6	16,9		9,213		77.38.36,18					3.23.51,73			T.
	(l) 51 (H.) Cephei sp. R.	2.47,9	43,6	45,0	43,1	44,0	40,7		10,643		332.32.31,31				48,19	-2.44.57,63			T.
	(l) 51 (Hev.) Cephei sp.	0.13,8	10,0	7,1	10,0	7,9	10,1		10,643		71.29.56,06					-2.44.58,00			T.
	β Lyræ R. . . . .	0.13,4	11,6	9,8	9,2	7,2	8,0		8,965		273.0.31,48				19,44	56.48.9,83			T.
	β Lyræ . . . . .	1.35,7	32,0	31,9	29,3	29,9	29,7		8,965	+2½	131.1.53,96					56.48.7,53			T.
	(b) B.A.C. 6485 . . . .	4.31,3	28,6	25,5	27,1	26,9	26,5				187.4.27,52				207,91	112.53.49,56			T.
Aug. 7	(m) Neptune . . . . .	0.33,9	31,1	29,9	30,0	30,6	29,1				172.35.30,88	29,296	55,5	54,6	99,94	98.23.4,95			T.
Aug. 10	Zenith Point . . . .	1.25,0	20,9	18,3	18,7	17,5	18,7		10,302		112.1.13,87								T.
	(n) Melpomene . . . .	3.31,2	28,7	32,6	28,6	29,7	27,5		7,921		176.54.13,88	29,616	58,0	55,5	121,15	102.42.9,16			T.
Aug. 12	☉ S.L. . . . .	2.34,8	32,2	31,3	29,9	30,7	27,7		11,670		149.36.56,86	29,227	61,0	62,4	42,77	75.23.33,76			T.
	☉ N.L. . . . .	0.58,3	58,0	55,7	55,3	55,5	53,5		11,670		149.5.21,45				41,96	74.51.57,54			T.
Aug. 13	☉ N.L. . . . .	2.58,9	56,6	57,9	55,6	57,0	52,1		8,180		149.23.35,00	29,604	64,0	65,3	42,72	75.10.11,85			T.
	(b) ☉ S.L. . . . .	4.36,0	36,3	33,1	31,5	33,9	31,5		8,180		149.55.11,57				43,54	75.41.49,24			T.
	(o) H. C. 33885 . . . .	3.46,7	45,0	45,0	45,1	45,1	42,6				187.13.45,80	29,708	60,3	58,3	212,10	113.3.12,03			T.
	B.A.C. 6304 . . . .	2.56,2	55,7	56,1	55,5	55,7	53,8				188.22.56,20				230,15	114.12.40,48			T.
	H. C. 34268 . . . .	...	...	...	...	...	...		7,251		188.23.53,52				230,42	114.13.38,07			T.
	β Lyræ R. . . . .	0.21,0	21,0	17,0	17,8	15,5	16,9		9,321		273.0.32,43		56,5		19,70	56.48.9,14			T.
	β Lyræ . . . . .	1.38,2	35,1	35,0	33,0	33,0	33,0		9,321	+4	131.1.50,65					56.48.4,48			T.
	Neptune . . . . .	3.59,5	55,2	58,0	54,9	56,6	54,3				172.38.57,35	29,716	53,4	51,0	102,36	98.26.33,84			T.
Aug. 14	(p) ☉ S.L. . . . .	4.46,4	44,0	47,0	43,6	46,7	40,5		13,081		150.13.41,58	29,728	65,9	67,1	44,05	76.0.19,76			T.
	☉ N.L. . . . .	3.11,2	10,0	10,0	8,1	7,5	5,7		13,081	+4	149.42.4,99				43,23	75.28.42,35			T.
Aug. 17	(b) ☉ N.L. . . . .	4.52,7	54,3	50,2	51,3	54,4	47,8	+6,7	12,749		150.38.54,45	29,850	63,5	69,6	44,68	76.25.34,74			B.
	☉ S.L. . . . .	1.29,7	31,3	26,9	28,3	29,2	25,4		12,749		151.10.31,46				45,53	76.57.12,60			B.

ONE REVOLUTION of the MICROMETER = 20'',852. ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.  
 ASSUMED CO-LATITUDE = 37°.47'.8'',00.

(a) Very faint, probably from cloud, and bisected hurriedly before the Transit observation. (b) Negative correction for Runs. (c) Times by Molyneux, 18<sup>h</sup>.16<sup>m</sup>.1<sup>s</sup>, 17<sup>m</sup>.22<sup>s</sup>. Molyneux slow, 3<sup>m</sup>.5<sup>s</sup>. (d) 'Good observation.' (e) 'Two other objects south and following.' (f) Times by Molyneux, 18<sup>h</sup>.21<sup>m</sup>.5<sup>s</sup>, 22<sup>m</sup>.32<sup>s</sup>. Molyneux slow, 3<sup>m</sup>.9<sup>s</sup>. (g) Times by Molyneux, 18<sup>h</sup>.30<sup>m</sup>.23<sup>s</sup>, 31<sup>m</sup>.29<sup>s</sup>. The corrections +1'',61 and -2'',57 for curvature of path were specially calculated. (h) The mercury very unsteady. (i) Cloudy and south wind blowing. (j) Faint, but bisection not doubtful. (k) Times by Molyneux, 18<sup>h</sup>.17<sup>m</sup>.24<sup>s</sup>, 18<sup>m</sup>.30<sup>s</sup>, 26<sup>m</sup>.49<sup>s</sup>, 23<sup>m</sup>.9<sup>s</sup>. Molyneux slow, 3<sup>m</sup>.13<sup>s</sup>. (m) 'Good.' (n) Seen only a few seconds and bisection uncertain. (o) 'A fainter of less N.P.D. preceded a few seconds.' (p) Limbs fringed and unsteady: bisection of N.L. delayed by cloud.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		o' " "	Inch.	o	o	"	o' " "	
Aug. 18	(b) (a) ☉ N.L. ....	4. 42,6	44,5	39,7	40,6	43,1	38,4	+6,7	14,081		150. 58. 16,32	29,760	64,8	69,8	45,05	76. 44. 56,98	B.
	☉ S.L. ....	1. 19,4	20,2	15,4	18,1	18,4	16,2		14,081		151. 29. 53,13				45,90	77. 16. 34,64	B.
	Zenith Point ....	1. 31,8	29,4	26,3	27,1	25,6	26,1		10,751		112. 1. 12,39						B.
Aug. 23	η Ophiuchi. ....	3. 56,3	54,9	56,9	55,2	56,2	52,2	+8,5			179. 43. 56,40	30,221	64,2	63,7	138,83	105. 32. 10,37	B.
	ξ Ophiuchi. ....	2. 57,6	56,8	54,6	55,8	55,5	54,8				185. 7. 56,68				186,35	110. 56. 58,17	B.
	(c) ☉ N.L. ....	3. 24,6	23,2	21,7	22,3	22,2	20,2			-2	186. 33. 26,36				203,97	112. 22. 45,47	B.
	☉ N.L. ....	...	...	...	...	...	...		9,950	-1	186. 33. 25,94					112. 22. 45,05	B.
	☉ N.L. ....	...	...	...	...	...	...		9,884		186. 33. 25,74					112. 22. 44,85	B.
	☉ N.L. ....	...	...	...	...	...	...		9,788	+1	186. 33. 26,04					112. 22. 45,15	B.
	☉ N.L. ....	...	...	...	...	...	...		9,739	+2	186. 33. 25,26					112. 22. 44,37	B.
Aug. 25	Zenith Point ....	1. 35,5	33,0	29,1	30,9	28,8	30,0		10,901		112. 1. 12,86						B.
	π Sagittarii. ....	1. 7,5	5,6	3,4	5,1	4,6	3,4				185. 26. 5,23	29,914	64,2	61,4	188,80	111. 15. 9,17	B.
Aug. 26	(d) H. C. 36516. ....	1. 46,7	46,2	43,6	45,6	47,4	43,8				187. 1. 46,05	30,039	62,8	58,8	211,34	112. 51. 12,53	B.
	H. C. 36777. ....	2. 21,8	21,0	19,4	20,0	20,5	18,9				184. 2. 20,93				175,26	109. 51. 11,33	B.
	h <sup>2</sup> Sagittarii. ....	2. 8,4	7,0	5,4	7,2	6,9	4,1				189. 22. 7,10				250,47	115. 12. 12,71	B.
	(a) e <sup>2</sup> Sagittarii. ....	4. 27,9	30,2	25,6	23,1	28,1	27,6				180. 39. 27,77				145,94	106. 27. 48,85	B.
	(e) ☉ S.L. ....	3. 11,9	10,6	8,8	11,2	9,2	8,5			-2	187. 13. 7,73	30,057	61,7	56,6	215,18	113. 2. 38,05	B.
	☉ S.L. ....	...	...	...	...	...	...		10,157	-1	187. 13. 6,12					113. 2. 36,44	B.
	☉ S.L. ....	...	...	...	...	...	...		10,308		187. 13. 4,51					113. 2. 34,83	B.
	☉ S.L. ....	...	...	...	...	...	...		10,365	+1	187. 13. 4,74					113. 2. 35,06	B.
	☉ S.L. ....	...	...	...	...	...	...		10,372	+2	187. 13. 5,89					113. 2. 36,21	B.
	29 Capricorni. ....	3. 39,6	37,9	39,0	38,9	37,7	36,0		10,372		179. 58. 31,44				141,76	105. 46. 48,34	B.
	Fortuna. ....	1. 40,6	41,3	39,5	41,1	40,9	39,2				172. 6. 40,90	30,058	59,3	54,5	100,59	97. 54. 16,63	B.
	Neptune. ....	1. 60,4	58,3	57,5	57,6	57,6	54,9				172. 46. 58,27				103,35	98. 34. 36,76	B.
	Irene. ....	1. 55,8	51,6	51,9	52,8	51,8	49,7				182. 21. 52,80			53,5	161,40	108. 10. 29,34	B.
Aug. 27	(f) ☉ S.L. ....	3. 12,0	11,2	10,5	10,2	10,5	7,6		10,951		154. 32. 51,40	30,138	63,0	69,5	51,78	80. 19. 38,32	B.
	☉ N.L. ....	1. 28,9	29,4	25,5	27,5	27,4	25,5		10,951		154. 1. 7,95				50,83	79. 47. 53,92	B.
	H. C. 33427. ....	1. 11,6	12,0	8,6	12,7	10,7	9,6				191. 41. 11,20	30,132	64,2	62,7	303,49	117. 32. 9,83	B.
	H. C. 33651. ....	2. 61,0	61,2	58,5	61,0	60,7	57,9				186. 58. 0,90				209,43	112. 47. 25,47	B.
	(g) H. C. 33806. ....	3. 54,0	51,5	52,1	51,4	52,4	48,4				190. 23. 52,73				270,91	116. 14. 18,78	B.
	(a) B.A.C. 6273. ....	0. 35,8	35,5	31,0	34,9	34,7	33,3				189. 30. 34,35				252,02	115. 20. 41,51	B.
	B.A.C. 6304. ....	2. 54,8	53,5	52,8	53,3	54,5	51,6				188. 22. 54,23				231,32	114. 12. 40,69	B.
	H. C. 34428. ....	2. 31,7	31,3	28,5	31,1	30,9	28,6				183. 42. 31,07				171,13	109. 31. 17,34	B.
	H. C. 34433. ....	...	...	...	...	...	...		6,500		183. 43. 44,05				171,32	109. 32. 30,51	B.
	H. C. 38740. ....	0. 8,4	9,6	4,1	8,3	7,3	6,5				183. 50. 7,40	30,140	62,4	58,8	173,79	109. 38. 56,33	B.
	(a) H. C. 39116. ....	4. 48,6	49,8	43,8	47,6	48,2	46,0				182. 59. 47,28				165,75	108. 48. 28,17	B.
	B. (w.) xx. 445. ....	2. 12,2	12,5	11,7	12,5	12,7	10,0				178. 32. 12,55				132,02	104. 20. 19,71	B.
	B.A.C. 7069. ....	4. 27,2	27,0	26,4	28,2	27,3	25,7				186. 49. 28,23				209,15	112. 38. 52,52	B.
	B.A.C. 7070. ....	...	...	...	...	...	...		8,759		186. 49. 54,11				209,25	112. 39. 18,50	B.
	η Capricorni. ....	1. 38,0	39,4	35,9	39,3	38,2	36,3		8,759		184. 37. 4,20	30,135	61,2	57,0	182,59	110. 26. 1,93	B.
	29 Capricorni. ....	3. 29,5	29,7	29,7	30,8	29,6	27,3				179. 58. 30,42				142,01	105. 46. 47,57	B.
	(h) ☉ S.L. ....	4. 9,7	9,5	9,6	9,5	7,9	5,7			-2	184. 39. 5,12				182,96	110. 28. 3,22	B.
	☉ S.L. ....	...	...	...	...	...	...		10,145	-1	184. 39. 4,51					110. 28. 2,61	B.
	☉ S.L. ....	...	...	...	...	...	...		10,253		184. 39. 4,55					110. 28. 2,65	B.
	☉ S.L. ....	...	...	...	...	...	...		10,368	+1	184. 39. 4,36					110. 28. 2,46	B.
	☉ S.L. ....	...	...	...	...	...	...		10,529	+2	184. 39. 3,09					110. 28. 1,19	B.
	μ Capricorni. ....	1. 24,1	24,0	22,4	24,4	24,4	21,3				178. 26. 23,83				131,87	104. 14. 30,84	B.
	(i) Fortuna. ....	2. 17,0	16,7	16,1	15,3	15,8	13,6				172. 12. 16,38	30,128	60,2	54,8	101,14	97. 59. 52,66	B.
	Neptune. ....	2. 39,0	38,1	37,4	37,2	38,6	34,6				172. 47. 38,22				103,58	98. 35. 16,94	B.
Aug. 28	(k) ☉ N.L. ....	2. 11,6	10,9	9,1	9,2	8,5	7,0		9,586		154. 22. 18,63	30,042	69,8	63,5	51,27	80. 9. 5,04	B.
	☉ S.L. ....	3. 55,0	55,2	54,0	53,9	53,4	50,0		9,586		154. 54. 3,33				52,22	80. 40. 50,69	B.
	μ Capricorni. ....	1. 17,2	17,2	15,3	17,8	16,8	15,3		9,585		178. 26. 25,60	29,988	63,6	60,2	130,39	104. 14. 31,13	B.
	ι Aquarii. ....	1. 38,2	37,1	35,9	37,5	36,0	34,6		9,585		178. 46. 45,65				132,50	104. 34. 53,29	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) Steady: through thin cloud. (c) The Limb was steady, but a little rough: neither Limb appeared full.  
 The Moon's face was covered by misty cloud, and had a copper colour. (d) 'Two fainter preceded about 10'. (e) Limb uneven and great motion.  
 (f) Tremor. (g) 'Low in the field.' H. C. 33830 was set for. (h) Serrated Limb. (i) Bright. (k) Great waving.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.			Inch.	o	o	"	o	"
Aug. 28	» S.L. ....	2. 14,8	12,7	11,6	13,0	11,5	11,1	+8,5	9,040	-2	181. 7. 27,33	29,988	63,6	60,2	148,79	106. 55. 51,26	B.
	» S.L. ....	...	...	...	...	...	...		9,163	-1	181. 7. 27,69					106. 55. 51,62	B.
	» S.L. ....	...	...	...	...	...	...		9,330		181. 7. 27,04					106. 55. 50,97	B.
	» S.L. ....	...	...	...	...	...	...		9,475	+1	181. 7. 26,77					106. 55. 50,70	B.
	» S.L. ....	...	...	...	...	...	...		9,636	+2	181. 7. 26,08					106. 55. 50,01	B.
	(a) Fortuna .....	2. 55,1	53,0	52,7	52,3	53,0	49,4				172. 17. 53,40				99,96	98. 5. 28,50	B.
	σ Aquarii .....	2. 57,7	55,1	55,6	55,5	55,3	52,9				175. 37. 56,18				114,87	101. 25. 46,19	B.
	λ Aquarii .....	4. 6,9	3,4	4,8	3,5	3,6	0,2				172. 34. 4,88				101,05	98. 21. 41,07	B.
	B. (w.) xxii. 1002	3. 40,4	37,0	37,2	37,4	37,4	34,5				172. 48. 38,33				102,05	98. 36. 15,52	B.
	Neptune .....	...	...	...	...	...	...		11,065		172. 48. 16,12				102,02	98. 35. 53,28	B.
Aug. 30	(b) ☉ S.L. ....	2. 10,6	11,6	8,9	8,2	9,4	6,6	+7,4	10,809		155. 35. 52,88	30,002	64,2	66,8	53,79	81. 23. 40,99	B.
	☉ N.L. ....	0. 24,4	27,1	22,3	25,1	25,1	22,6		10,809		155. 5. 7,66				52,80	80. 51. 54,78	B.
	(c) ε <sup>9</sup> Sagittarii .....	4. 27,8	27,0	23,1	25,2	25,0	25,5				180. 39. 25,47	29,978	60,3	55,0	146,77	106. 27. 46,56	B.
	(c) H. C. 37568 .....	4. 50,4	49,6	44,8	47,7	48,9	47,3				190. 24. 48,07				274,21	116. 15. 16,60	B.
	B.A.C. 6814 .....	3. 19,7	17,0	16,9	17,2	15,2	16,9				188. 28. 17,95				235,37	114. 18. 7,64	B.
	H. C. 37969 .....	2. 15,5	13,3	13,6	14,2	13,7	12,6				180. 2. 14,37				142,28	105. 50. 30,97	B.
	g Sagittarii .....	...	...	...	...	...	...		3,987		180. 4. 19,75				142,53	105. 52. 36,60	B.
	B.A.C. 6878 .....	0. 47,7	46,5	41,7	46,2	46,8	44,2			+3	187. 10. 45,13				214,74	113. 0. 14,19	B.
	H. C. 38503 .....	2. 39,8	38,0	38,8	38,1	38,3	36,8			+2	182. 57. 38,75				165,81	108. 46. 18,88	B.
	(d) α <sup>1</sup> Capricorni R. ....	1. 13,3	14,5	9,7	12,4	11,8	10,3		5,263		226. 52. 51,08			54,8	124,23	102. 57. 34,83	B.
	(d) α <sup>2</sup> Capricorni R. ....	...	...	...	...	...	...		11,815		226. 50. 34,45				124,44	102. 59. 51,67	B.
	(c) Fortuna .....	4. 12,4	13,9	9,0	12,1	11,1	10,7		10,242		172. 29. 6,28	29,979	57,3	51,5	102,47	98. 16. 43,07	B.
	(c)(e) Neptune .....	4. 32,6	31,6	28,3	30,5	31,2	28,2				172. 49. 30,28				103,89	98. 37. 8,49	B.
	(e) B. (w.) xxii. 1002	...	...	...	...	...	...		12,606		172. 48. 35,94				103,83	98. 36. 14,09	B.
	φ Aquarii .....	2. 59,3	57,0	56,8	57,5	56,7	54,6				171. 2. 57,72				96,77	96. 50. 28,81	B.
	ψ <sup>3</sup> Aquarii .....	2. 6,2	3,3	3,5	4,6	3,3	1,4				174. 37. 4,23				111,91	100. 24. 50,46	B.
	(f) » N.L. ....	3. 42,2	39,7	42,9	40,3	40,6	37,6		10,081	-2	171. 43. 33,08	29,963	56,8	50,4	99,57	97. 31. 6,97	B.
	» N.L. ....	...	...	...	...	...	...		10,259	-1	171. 43. 32,74					97. 31. 6,63	B.
	» N.L. ....	...	...	...	...	...	...		10,404		171. 43. 33,05					97. 31. 6,94	B.
	» N.L. ....	...	...	...	...	...	...		10,642	+1	171. 43. 31,37					97. 31. 5,26	B.
	» N.L. ....	...	...	...	...	...	...		10,749	+2	171. 43. 32,41					97. 31. 6,20	B.
	Castor sp. R. ....	1. 11,9	9,8	8,7	8,3	5,0	7,6		10,105		272. 1. 6,64	29,990	59,8	59,2	20,89	57. 47. 35,93	B.
	Castor sp. ....	1. 22,7	19,5	18,4	18,4	16,5	15,7		10,005	+2½	132. 1. 19,34					57. 47. 34,55	B.
	Castor nf. R. ....	1. 11,9	9,8	8,7	8,3	5,0	7,6		10,005		272. 1. 8,73				20,89	57. 47. 33,84	B.
	Castor nf. ....	1. 22,7	19,5	18,4	18,4	16,5	15,7		10,105	+2½	132. 1. 17,25					57. 47. 32,46	B.
	Pollux R. ....	2. 16,2	13,4	11,7	12,7	9,6	10,0		12,062		268. 11. 29,82				25,34	61. 37. 17,20	B.
	Pollux .....	1. 40,0	39,0	36,8	38,4	36,8	35,8		12,062	+2	135. 50. 55,53					61. 37. 15,19	B.
Aug. 31	(g) ☉ N.L. ....	1. 27,0	28,8	27,8	23,6	30,2	20,0		9,111		155. 26. 45,14	29,992	64,8	65,2	53,62	81. 13. 33,08	B.
	☉ S.L. ....	3. 9,3	11,6	11,0	8,6	12,4	3,2		9,111		155. 58. 28,67				54,62	81. 45. 17,61	B.
	(h) α Ursæ Majoris R. ....	1. 15,4	12,0	9,1	13,3	6,8	8,9		10,208		302. 21. 6,86				10,34	27. 27. 4,48	B.
	α Ursæ Majoris .....	1. 30,0	26,1	25,4	23,0	24,0	20,3		10,208	+1½	101. 41. 21,46					27. 27. 5,44	B.
	(c) B. (w.) xxi. 252 .....	4. 60,1	57,8	55,1	57,9	57,6	56,4				178. 49. 57,47	30,053	57,8	52,7	135,16	104. 38. 6,95	B.
	H. C. 41580 .....	1. 36,0	33,5	32,4	34,0	33,2	32,9				176. 36. 34,05				122,02	102. 24. 30,39	B.
	B. (w.) xxi. 495 .....	0. 8,9	9,3	6,9	9,7	7,9	8,1				176. 55. 8,50				123,72	102. 43. 6,54	B.
	B. (w.) xxi. 638 .....	1. 59,7	55,6	55,9	56,1	55,7	55,2				173. 41. 56,85				107,69	99. 29. 38,86	B.
	B. (w.) xxi. 717 .....	4. 13,7	11,1	13,6	12,4	11,3	10,6				176. 54. 13,15				123,64	102. 42. 11,11	B.
	(i) Fortuna .....	3. 16,0	13,3	14,1	12,5	13,2	11,3		5,736		172. 34. 43,09	30,048	57,2	50,0	103,41	98. 22. 20,82	B.
Sept. 1	Neptune .....	0. 8,5	8,3	5,9	8,4	7,4	5,9				172. 50. 7,42				104,49	98. 37. 46,23	B.
	(k) ☉ S.L. ....	1. 23,2	22,0	19,6	21,2	18,9	18,0		13,132	+1	156. 20. 15,25	30,102	62,2	67,3	55,29	82. 7. 4,86	B.
	☉ N.L. ....	4. 36,5	31,3	31,8	37,3	35,0	34,0		13,132	+1½	155. 48. 29,78				54,28	81. 35. 18,38	B.
	Zenith Point .....	1. 23,8	20,6	16,5	18,5	17,8	16,0		10,264		112. 1. 13,68						B.
	Fortuna .....	0. 28,3	28,1	23,7	25,9	26,4	26,7		10,301		172. 40. 20,34	30,188	58,2	56,9	102,83	98. 27. 57,49	B.
	Neptune .....	0. 48,0	47,5	45,3	46,4	47,5	44,4				172. 50. 46,70				103,56	98. 38. 24,58	B.
	Irene .....	0. 32,9	33,2	30,6	32,4	31,3	31,6		10,242		183. 0. 27,08				166,75	108. 49. 8,15	B.
Sept. 2	(l) ☉ N.L. ....	0. 33,3	32,8	28,6	31,3	31,1	28,2		10,384		156. 10. 23,01	30,240	63,0	67,8	55,17	81. 57. 12,50	B.
	☉ S.L. ....	2. 16,3	16,5	13,0	14,8	13,8	11,2		10,384		156. 42. 6,81				56,19	82. 28. 57,32	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) 'Good,' (b) Waving, but the observation reckoned good. (c) Negative correction for Runs. (d) Not time enough for the direct observations.  
 (e) 'Two objects 5' apart,' (f) Waving. (g) Bad definition. (h) Flaring. (i) Another object was bisected at 10",000. (k) Dense clouds passing.  
 (l) Steady.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for $\delta$ .	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Sept. 2	B.A.C. 6814.....	3.21,0	20,1	19,4	21,4	19,3	18,6	+7,4			188.28.20,78	30,218	63,5	57,8	235,88	114.18.10,98	B.
	H. C. 38022.....	4.12,6	12,0	11,2	12,2	10,6	9,7				187.54.12,42				226,35	113.43.53,09	B.
	(a) H. C. 38220.....	1.42,3	40,7	37,6	41,8	41,1	39,8				181.56.40,95				157,26	107.45.12,53	B.
	H. C. 38339.....	3.24,3	23,1	23,4	23,6	23,4	21,4				183.18.23,64				169,41	109.7.7,37	B.
	$\alpha^1$ Capricorni R.....	1.25,7	26,9	21,8	25,9	26,0	24,3		5,948	+2 $\frac{3}{4}$	226.52.49,94				124,46	102.57.36,20	B.
	$\alpha^1$ Capricorni.....	0.24,4	25,0	21,3	22,9	24,2	21,9		12,428	+4	177.9.32,19					102.57.30,97	B.
	$\alpha^2$ Capricorni R.....	1.25,7	26,9	21,8	25,9	26,0	24,3		12,428		226.50.34,82				124,67	102.59.51,53	B.
	$\alpha^2$ Capricorni.....	0.24,4	25,0	21,3	22,9	24,2	21,9		5,919	+4	177.11.47,92					102.59.46,91	B.
	(b) H. C. 40125.....	0.43,8	44,1	41,0	43,2	43,5	41,3				182.55.42,98				165,88	108.44.23,18	B.
	(b) B.A.C. 7202.....	...	...	...	...	...	...		10,332		182.55.36,26				165,86	108.44.16,44	B.
Sept. 3	(c) $\odot$ N.L.....	3.19,0	18,2	17,8	17,3	17,2	16,1		12,600	+2 $\frac{1}{2}$	156.32.23,69	30,196	63,3	71,6	55,38	82.19.13,39	B.
	$\odot$ S.L.....	0.5,3	7,4	0,6	4,7	5,9	1,6		12,600	+2 $\frac{1}{2}$	157.4.9,54				56,41	82.51.0,27	B.
	B.A.C. 6814.....	3.19,3	20,0	17,8	21,8	18,6	19,3				188.28.20,28	30,148	62,4	58,0	235,24	114.18.9,84	B.
	H. C. 37846.....	...	...	...	...	...	...		12,455		188.27.29,09				235,00	114.17.18,41	B.
	H. C. 37980.....	3.34,6	35,4	33,2	35,6	34,2	33,0				187.53.35,22				225,57	113.43.15,11	B.
	B.A.C. 6878.....	0.46,9	48,2	41,5	48,6	48,1	46,4				187.10.46,82				214,62	112.0.15,76	B.
	(d) H. C. 38498.....	2.24,5	23,7	21,4	23,8	23,3	22,8				189.52.23,83				262,11	115.42.40,26	B.
	H. C. 38765.....	4.7,3	5,4	5,8	6,9	5,3	5,0				181.29.6,97				153,08	107.17.34,37	B.
	Fortuna.....	1.33,1	33,6	30,5	33,6	33,4	30,5				172.51.32,83	30,138	60,5	55,3	103,78	98.39.10,93	B.
	Neptune.....	1.63,3	63,1	59,9	63,1	62,5	59,6				172.52.2,42				103,82	98.39.40,56	B.
	B. (w.) xxii. 1156	0.26,6	26,8	22,6	26,5	25,1	23,9				176.15.25,35				119,83	102.3.19,50	B.
	B. (w.) xxiii. 158	4.56,5	55,5	52,7	55,6	55,9	54,0				165.44.56,25				79,05	91.32.9,62	B.
	Irene.....	2.38,9	38,2	36,5	38,7	37,6	36,2				183.12.38,33				168,93	109.1.21,58	B.
Sept. 8	Zenith Point.....	0.65,3	62,6	58,6	60,4	59,0	60,5	+7,2	9,419	+2 $\frac{1}{2}$	112.1.13,41						B.
	$\alpha$ Lyræ R.....	2.20,0	18,1	17,1	17,4	14,7	15,5		8,533	+2 $\frac{1}{2}$	278.27.47,52	30,040	64,3	60,4	13,83	51.20.47,72	B.
	$\alpha$ Lyræ.....	3.63,2	60,0	61,2	60,3	59,0	56,2		8,533	+4 $\frac{1}{4}$	125.34.33,71					51.20.42,13	B.
	H. C. 39125.....	2.7,4	5,6	4,3	5,7	3,7	2,1				180.27.5,30	30,050		59,4	144,30	106.15.24,19	B.
	B. (w.) xx. 612.....	4.21,1	22,3	20,2	19,8	18,5	16,9				178.14.20,83				129,64	104.2.25,06	B.
	B.A.C. 7102.....	1.22,8	22,2	18,6	22,6	21,1	20,0				185.16.21,53				188,52	111.5.24,64	B.
	H. C. 39688.....	...	...	...	...	...	...		13,243		185.15.13,91				188,30	111.4.16,80	B.
	(e) B.A.C. 7487.....	4.61,0	61,9	58,4	61,7	62,4	58,7			+2 $\frac{1}{2}$	178.20.0,45	30,048	62,2	59,3	130,23	104.8.5,27	B.
	(e)(f) B. (w.) xxi. 774	4.31,7	33,2	28,8	32,4	31,3	30,0				179.14.31,12				135,98	105.2.41,69	B.
	(e)(g) B. (w.) xxii. 143	4.53,5	52,8	48,8	52,4	51,0	49,8				173.19.51,33	30,044	62,2	59,3	104,62	99.7.30,54	B.
	Neptune.....	0.14,5	13,5	10,0	12,4	12,8	10,2				172.55.12,28				102,88	98.42.49,75	B.
	(h) Irene.....	0.56,0	54,8	50,9	53,9	54,2	51,8				183.40.53,80				171,55	109.29.39,94	B.
Sept. 9	(e) B. (w.) xxi. 252.....	4.62,7	61,7	59,3	61,0	60,5	58,0				178.50.0,53	29,950	63,3	59,5	132,86	104.38.7,98	B.
	B.A.C. 7456.....	0.60,7	59,0	57,4	58,6	58,9	55,7				176.45.58,62				120,77	102.33.53,98	B.
	(f) B. (w.) xxi. 539.....	2.58,4	55,4	55,3	55,9	55,3	54,2				175.7.56,45				112,44	100.55.43,48	B.
	B. (w.) xxi. 675.....	4.25,0	21,3	23,8	22,1	21,4	20,4				173.54.23,38				106,76	99.42.4,73	B.
	B. (w.) xxi. 774.....	4.31,9	29,1	31,4	30,2	29,4	26,4				179.14.30,82				135,48	105.2.40,89	B.
	(i) H. C. 42374.....	2.57,8	55,7	56,6	56,0	56,0	53,2				178.32.56,58				131,08	104.21.2,25	B.
	B. (w.) xxi. 1023.....	0.43,6	41,3	39,4	41,1	42,4	39,2				174.55.41,33				111,46	100.43.27,38	B.
	(e)(k) Fortuna.....	4.5,8	6,7	3,1	5,3	5,6	3,8				173.24.4,83	29,940	63,0	59,3	104,57	99.11.43,99	B.
	Neptune.....	0.51,3	51,5	48,3	50,3	50,9	47,4				172.55.50,15				102,56	98.43.27,30	B.
	Irene.....	0.60,3	58,7	55,6	58,3	58,0	57,0		9,725		183.46.3,93				171,80	109.34.50,32	B.
Sept. 10	$\odot$ S.L.....	1.20,2	21,3	17,0	19,9	18,4	16,4		9,725		159.41.24,91	29,884	63,8	63,8	62,12	85.28.21,62	B.
Sept. 11	(e)(l) Fortuna.....	4.26,5	26,7	21,8	25,1	23,8	24,4				173.34.24,57	29,840	60,0	51,7	106,59	99.22.5,75	B.
	Neptune.....	1.64,8	62,9	61,8	62,9	62,3	59,6				172.57.2,87				103,90	98.44.41,36	B.
	(f) Irene.....	1.16,9	14,9	13,6	15,6	13,3	14,5				183.56.15,10				175,62	109.45.5,31	B.
Sept. 13	(m) Neptune.....	3.15,5	14,0	13,1	14,2	12,3	11,4	+9,1			172.58.14,38	29,908	53,7	46,8	105,27	98.45.53,56	B.
Sept. 14	(n) $\odot$ S.L.....	3.4,5	8,1	2,3	5,9	2,4	1,5		9,652		161.13.12,31	29,900	55,6	55,4	66,69	87.0.12,91	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) 'No object near this.' (b) 'The components of a double star.' (c) Unsteady. (d) 'A fainter of the same R.A. was some minutes lower in the field,' viz. H. C. 38497. (e) Negative correction for Runs. (f) Faint. (g) Mistaken for Fortuna: the same object was observed with the Transit, but the observation is not retained. (h) 'The middle of three.' (i) 'The preceding of two.' (k) Bright. (l) Very faint: clouds had just cleared off. (m) The pointer reading has been increased 10' for this and the two following observations. Before this observation the pointer was accidentally displaced, in consequence of which Fortuna and Irene were missed. (n) Great unsteadiness.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	"					
Sept.16	(a) ☉ N.L.....	2. 15.7	17.9	15.6	16.3	14.3	13.1	+9.1	8,891		161. 27. 39.30	29,716	54.9	56.4	66.71	87. 14. 39.92		S.	
	Zenith Point....	1. 16.5	14.9	10.9	13.1	10.5	11.4		9,971		112. 1. 13.87							S.	
	α Aquilæ R....	3. 34.2	30.3	30.0	30.3	32.0	29.2		10,476		248. 18. 22.14	29,792	54.3	50.0	55.48	81. 30. 55.43		B.	
	α Aquilæ.....	4. 8.7	13.8	12.8	14.7	16.6	17.8		10,476		155. 44. 5.40				55.48	81. 30. 54.79		B.	
	H. C. 38498....	2. 37.2	35.4	35.6	31.9	33.8	35.3		10,576		189. 52. 23.64				263.37	115. 42. 40.92		S.	
	B. (w.) xx. 419..	2. 45.1	43.9	44.6	42.2	42.4	41.2				178. 47. 44.05	29,793	53.5	47.8	135.12	104. 35. 53.08		S.	
	B.A.C. 7102....	1. 20.8	19.4	16.6	16.7	17.5	16.9				185. 16. 18.38				191.43	111. 5. 23.72		S.	
	H. C. 39688....								13,207		185. 15. 11.51				191.22	111. 4. 16.64		S.	
	ψ Capricorni ....	2. 30.1	32.6	27.4	25.4	25.3	24.3			+2	189. 57. 27.98				266.43	115. 47. 48.32		S.	
	H. C. 40386....	4. 35.3	33.4	36.6	32.3	33.0	30.2				183. 19. 34.83				170.70	109. 8. 19.44		S.	
	η Capricorni. ....	2. 4.5	4.9	5.9	2.5	1.6	0.2				184. 37. 3.90				183.98	110. 26. 1.79		S.	
	29 Capricorni....	3. 32.5	32.8	27.9	30.3	30.6	25.9				179. 58. 31.05				143.07	105. 46. 48.03		S.	
	β Aquarii R. ....	2. 15.7	15.4	8.2	10.7	9.3	9.9		10,686	+0 1/2	233. 36. 57.90	29,789	52.8	48.8	94.37	96. 12. 58.56		S.	
	β Aquarii.....	0. 44.0	43.1	42.1	41.3	41.6	43.4		10,686	+2 3/4	170. 25. 28.38					96. 12. 56.66		S.	
Fortuna.....	3. 36.5	35.0	34.5	33.9	34.2	32.5				173. 58. 35.53	29,788	51.0	45.8	109.52	99. 46. 18.96		B.		
Neptune.....	0. 3.5	4.3	0.4	3.2	2.1	0.9			+2 1/2	173. 0. 2.25				105.20	98. 47. 41.36		B.		
Sept.17	(c) ☉ S.L.....	3. 26.5	28.7	27.4	25.7	24.6	23.3		11,957	+1 1/2	162. 22. 45.87	29,824	53.7	56.2	69.19	88. 9. 48.97		B.	
	☉ N.L.....	1. 34.3	35.0	31.6	32.9	30.4	30.3		11,957	+2 1/2	161. 50. 51.44				67.90	87. 37. 53.25		B.	
	Zenith Point....	1. 34.3	31.0	26.6	29.9	26.7	26.9		10,737		112. 1. 14.31							S.	
	53 Sagittarii ....	0. 51.1	50.2	47.1	48.3	48.0	47.2				187. 55. 48.88	29,812	54.5	48.3	228.21	113. 45. 31.00		S.	
	B.A.C. 6727.....								9,445		187. 56. 0.45				228.26	113. 45. 42.62		S.	
	(d)(e)H. C. 37568 ....	4. 59.3	60.8	56.4	58.8	58.6	55.7				190. 24. 58.27				276.63	116. 15. 28.81		S.	
	H. C. 37969.....	2. 15.6	17.8	16.6	18.8	16.4	15.5				180. 2. 17.48				143.47	105. 50. 34.86		S.	
	g Sagittarii.....								4,002		180. 4. 22.55				143.71	105. 52. 40.17		S.	
	H. C. 38161.....	3. 33.2	34.9	35.1	34.2	34.1	31.2				182. 8. 34.85				159.90	107. 57. 8.66		S.	
	H. C. 38503.....	2. 38.1	40.2	38.6	39.4	37.4	44.5				182. 57. 40.52				167.19	108. 46. 21.62		S.	
	α <sup>1</sup> Capricorni....	4. 31.9	32.7	33.6	32.4	32.3	31.7				177. 9. 33.80				125.20	102. 57. 32.91		S.	
	α <sup>2</sup> Capricorni....								3,467		177. 11. 50.03				125.41	102. 59. 49.35		S.	
	B. (w.) xx. 445. ....	2. 14.1	16.0	15.6	14.5	14.5	13.7		9,708		178. 32. 21.49				133.44	104. 20. 28.84		S.	
	B. (w.) xx. 612. ....	4. 17.6	18.2	19.2	16.0	16.5	13.7				178. 14. 18.17				131.56	104. 2. 23.64		S.	
	B.A.C. 7128. ....	3. 39.3	40.4	40.0	37.3	38.1	36.2				188. 28. 39.73				237.47	114. 18. 31.11		S.	
	(f) B.A.C. 7202.....	0. 36.1	37.2	34.9	35.3	34.8	36.3				182. 55. 35.95	29,799	53.2	45.3	167.28	108. 44. 17.14		S.	
	H. C. 40125.....								9,679		182. 55. 42.64				167.30	108. 44. 23.85		S.	
	(g) Fortuna.....	2. 56.3	55.7	56.2	55.6	57.3	54.8		9,687		174. 3. 3.40				109.81	99. 50. 47.12		B.	
	Neptune.....	0. 32.0	34.0	34.0	33.8	32.6	31.9		9,687		173. 0. 39.73				105.19	98. 48. 18.83		B.	
Sept.19	Zenith Point....	1. 24.0	23.4	19.9	20.0	18.1	20.3	+10.1	10,375		112. 1. 13.58							S.	
Sept.20	(h) ☉ N.L.....	1. 18.9	20.6	17.7	19.5	17.2	18.6		11,532	+4	163. 0. 46.20	29,500	56.2	60.6	69.38	88. 47. 50.00		B.	
	(i) H. C. 40684.....	0. 40.9	42.3	38.3	41.5	41.6	40.4				184. 0. 41.07	29,483	50.6	53.1	174.17	109. 49. 29.66		B.	
	(e)(k)B. (w.) xxi. 15..	4. 5.7	9.5	5.3	8.4	7.3	7.9				176. 19. 7.05				118.35	102. 6. 59.82		B.	
	H. C. 41200.....	0. 44.0	44.7	40.9	44.2	43.9	42.7				179. 55. 43.63				140.05	105. 43. 58.10		B.	
	(e) H. C. 41343.....	4. 50.0	52.5	47.6	50.4	53.0	49.3				177. 4. 50.40				122.17	102. 52. 46.99		B.	
	B. (w.) xxi. 357. ....	1. 41.3	40.0	39.6	39.3	41.6	38.7				175. 31. 40.65				114.07	101. 19. 29.14		B.	
Sept.21	B.A.C. 7456.....	0. 60.5	61.3	59.8	59.8	61.9	58.6				176. 46. 0.65				120.46	102. 33. 55.53		B.	
	o Sagittarii ....	2. 52.6	51.6	49.7	49.7	50.5	50.8				186. 7. 51.78	30,012	53.2	49.8	202.70	111. 57. 8.90		S.	
	(l) S.L.....	1. 18.0	18.1	14.7	18.1	16.5	15.5			-2	188. 56. 16.55				246.65	114. 46. 17.62		S.	
	) S.L.....								10,008	-1	188. 56. 16.79					114. 46. 17.86		S.	
	) S.L.....								10,028		188. 56. 16.67					114. 46. 17.74		S.	
	) S.L.....								10,033	+1	188. 56. 16.71					114. 46. 17.78		S.	
	) S.L.....								10,059	+2	188. 56. 16.18					114. 46. 17.25		S.	
	H. C. 36516.....	1. 38.1	39.2	34.0	36.6	34.4	37.1				187. 1. 37.10				215.08	112. 51. 6.60		S.	
	h <sup>2</sup> Sagittarii.....	2. 5.1	5.0	2.2	2.4	1.2	2.2				189. 22. 3.72				254.96	115. 12. 13.10		S.	
	e <sup>2</sup> Sagittarii.....	4. 26.4	26.7	28.3	26.6	23.5	23.4				180. 39. 27.32				148.51	106. 27. 50.25		S.	
	(m) H. C. 37846.....	2. 23.9	23.0	22.6	21.3	20.7	20.3				188. 27. 22.77				237.92	114. 17. 15.11		S.	
	B.A.C. 6889.....	4. 13.6	11.6	13.3	10.6	10.2	10.8				185. 54. 13.10				199.80	111. 43. 27.32		S.	
	(n) H. C. 38876.....	4. 13.0	10.6	13.6	10.8	9.4	8.4				182. 54. 10.72	30,088		48.1	168.26	108. 42. 53.40		S.	

ONE REVOLUTION of the MICROMETER = 20".852. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8".00.

(a) Motion. The observations marked S were taken by Mr Simmonds.  
 not be satisfactorily bisected. (d) Too faint, the sky being very misty.  
 (g) A fainter and preceding object was bisected at 10,000 of the micrometer.  
 perhaps not full. (m) 'The middle one of three: a brighter preceding.'

(b) Rather indefinite in both observations. (c) Extremely unsteady; could  
 (e) Negative correction for Runs. (f) 'The north-preceding star.'  
 (h) Cloudy. (i) 'A fainter south-following.' (k) Faint. (l) Rough;  
 (n) The Barometer read 40<sup>m</sup> after the observation.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Sept.21	(a) B. (w.) xx. 612..	4.15,9	14,5	16,9	13,8	13,3	11,3	+10,1			178.14.15,72	30,088	53,2	48,1	132,82	104.2.22,96	S.		
	H. C. 39981.....	3.12,6	11,5	12,4	10,1	9,5	9,1				184.3.11,93				179,60	109.52.5,95	S.		
	B. (w.) xx. 1203.	1.10,1	10,8	8,2	8,5	7,2	7,7				178.1.9,13				131,48	103.49.15,03	S.		
	ζ Cygni R.....	0.46,6	46,3	41,2	42,1	42,0	42,6		8,034	-1	269.26.24,61	30,088			24,49	60.22.21,46	S.		
	ζ Cygni.....	0.21,0	19,8	17,6	15,8	15,9	18,6		8,034	+2	134.35.59,56					60.22.18,47	S.		
	β Aquarii R....	1.41,4	42,0	37,7	37,6	38,0	42,1		9,025	-1	233.37.0,71				95,44	96.12.56,31	S.		
	β Aquarii.....	0.6,8	7,3	4,9	4,5	4,1	4,7		9,025	+2	170.25.25,69					96.12.55,55	S.		
	(b) Fortuna.....	4.51,1	51,9	49,2	51,0	51,5	51,6				174.19.51,13	30,158	50,5	45,4	112,62	100.7.38,17	B.		
	Neptune.....	2.58,0	56,4	57,2	57,6	58,0	54,5				173.2.58,12				106,80	98.50.39,34	B.		
Sept.22	(c) ☉ N.L.....	2.20,4	20,3	19,0	21,4	16,6	17,9		9,700		163.47.26,31	30,349	53,1	56,8	73,94	89.34.34,67	S.		
	☉ S.L.....	4.15,3	14,1	15,2	12,5	11,6	11,8		9,700		164.19.21,11				75,36	90.6.30,89	S.		
	(d) ☽ S.L.....	1.61,0	61,1	59,4	59,1	59,4	58,1		10,009	-2	187.56.57,48	30,388	52,2	53,9	230,22	113.46.42,12	B.		
	☽ S.L.....	...	...	...	...	...	...		10,091	-1	187.56.57,19					113.46.41,83	B.		
	☽ S.L.....	...	...	...	...	...	...		10,185		187.56.56,51					113.46.41,15	B.		
	☽ S.L.....	...	...	...	...	...	...		10,289	+1	187.56.55,50					113.46.40,14	B.		
	☽ S.L.....	...	...	...	...	...	...		10,314	+2	187.56.56,02					113.46.40,66	B.		
	Sept.24	☉ N.L.....	3.13,3	11,2	13,0	11,6	11,1	10,2	+7,3	7,140	+1	164.34.11,89	30,430	57,2	60,1	75,73	90.21.21,91	T.	
		☉ S.L.....	0.10,9	11,6	7,4	8,9	9,2	8,9		7,140	+2	165.6.8,61				77,21	90.53.20,11	T.	
(e) Polaris SP. R...		1.20,8	17,7	15,5	15,6	15,9	16,9		9,920		331.16.19,18	30,408	58,6	62,6	47,19	-1.28.44,66	T.		
(e) Polaris SP.....		1.8,1	7,0	3,7	3,1	5,0	4,2		9,920		72.46.7,09					-1.28.45,81	T.		
(e) Polaris SP. R....		1.6,7	3,4	1,0	2,1	2,6	1,1		9,260		331.16.19,68					-1.28.45,16	T.		
(e) Polaris SP. R....		...	...	...	...	...	...		9,326		331.16.18,97					-1.28.44,45	T.		
(e)(f) Polaris SP.....		0.61,8	59,8	56,6	56,9	58,1	57,3		9,326		72.46.7,20					-1.28.45,70	T.		
(e) Polaris SP.....		...	...	...	...	...	...		8,960		72.46.7,68					-1.28.45,22	T.		
(g) δ Capricorni....		4.10,6	7,9	10,2	8,4	7,8	6,1				108.59.9,52	30,360	56,0	52,7	151,87	106.47.35,68	T.		
(h) ☽ S.L.....		2.34,4	33,0	32,5	33,3	34,4	32,2		10,104	-2	182.27.26,26	30,356	56,5	52,6	164,13	108.16.4,68	B.		
☽ S.L.....		...	...	...	...	...	...		10,252	-1	182.27.25,96					108.16.4,38	B.		
☽ S.L.....		...	...	...	...	...	...		10,401		182.27.25,54					108.16.3,96	B.		
☽ S.L.....		...	...	...	...	...	...		10,551	+1	182.27.25,01					108.16.3,43	B.		
☽ S.L.....		...	...	...	...	...	...		10,722	+2	182.27.23,93					108.16.2,35	B.		
Sept.25		(b) H. C. 36501.....	4.55,6	56,1	52,9	53,7	54,9	52,7			+1	181.39.54,26	30,063	56,8	53,6	155,49	107.28.24,04	T.	
	H. C. 36814.....	3.57,3	55,4	55,5	54,9	55,2	52,0				188.33.56,00				238,36	114.23.48,65	T.		
	H. C. 37071.....	4.11,7	9,4	9,9	8,2	9,0	8,0				186.24.10,38				205,06	112.13.29,73	T.		
	γ Aquilæ R....	4.24,2	22,0	21,2	20,7	20,0	20,7		8,698	+1	250.4.49,64				52,23	79.44.24,30	T.		
	γ Aquilæ.....	2.9,6	9,5	8,0	8,0	8,0	7,0		8,698	+2½	153.57.36,19					79.44.22,71	T.		
	β Aquilæ R....	2.20,3	18,9	16,0	17,5	17,1	17,7		10,775		245.52.2,32				60,50	83.57.19,89	T.		
	β Aquilæ.....	0.39,4	40,7	37,9	37,2	39,2	38,0		10,775		158.10.22,72					83.57.17,51	T.		
	B.A.C. 6907.....	3.44,4	43,1	44,0	42,7	43,6	40,2				179.38.43,90	30,046	55,1	51,9	140,77	105.26.58,96	T.		
	H. C. 38705.....	2.59,4	57,9	58,6	57,0	57,9	56,9				181.17.58,67				153,00	107.6.25,96	T.		
	* R. 20 <sup>h</sup> . 5 <sup>m</sup> . 55 <sup>s</sup> .	...	...	...	...	...	...		19,920		181.14.31,82				152,54	107.2.58,65	T.		
	B.A.C. 6987.....	2.23,1	23,0	22,0	22,1	21,3	21,7			+0½	184.17.22,76				180,44	110.6.17,49	T.		
	B.A.C. 7016.....	1.51,7	51,7	50,2	51,1	51,3	48,4			+3	178.46.50,83			51,4	135,16	104.35.0,28	T.		
	B. (w.) xx. 419..	...	...	...	...	...	...		7,627	+1	178.47.40,62				135,25	104.35.50,16	T.		
	β Aquarii.....	0.28,5	28,8	26,0	27,9	27,0	27,0				170.25.27,63	30,024	53,5	51,0	94,68	96.12.56,60	T.		
	(b) Fortuna.....	4.16,0	17,1	13,9	16,1	16,1	14,7				174.34.15,47	30,010	52,1	50,1	112,13	100.22.1,89	T.		
	☽ S.L.....	0.55,4	55,4	53,0	55,2	55,6	52,9		9,583	-1	178.26.0,42	29,997	51,1	49,5	133,26	104.14.7,97	T.		
	☽ S.L.....	...	...	...	...	...	...		9,722		178.26.0,60					104.14.8,15	T.		
	☽ S.L.....	...	...	...	...	...	...		9,849	+1	178.26.0,95					104.14.8,50	T.		
	☽ S.L.....	...	...	...	...	...	...		9,923	+2	178.26.2,35					104.14.9,90	T.		
	Neptune.....	0.13,5	14,9	10,7	12,8	12,2	12,4		9,923		173.5.14,41				105,50	98.52.54,20	T.		
	(i) φ Aquarii R....	3.47,3	45,6	42,3	44,0	44,9	42,7		7,956		232.59.27,99	29,988	50,7	49,1	97,28	96.50.31,00	T.		
	φ Aquarii.....	2.15,1	15,0	13,3	13,4	13,4	13,0		7,956	+2¼	171.2.56,93					96.50.28,50	T.		
	ψ <sup>3</sup> Aquarii.....	1.24,1	22,8	22,6	22,1	22,9	21,3		7,956		174.37.5,59				112,50	100.24.52,38	T.		
Sept.27	Zenith Point ....	1.22,3	20,9	17,2	18,5	16,9	17,7		10,265		112.1.13,71							T.	

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) 'Two fainter north-following.' (b) Negative correction for Runs. (c) Both limbs unsteady and badly defined. (d) Rough and unsteady.  
 (e) Times by Molyneux, 13<sup>h</sup>. 3<sup>m</sup>. 34<sup>s</sup>, 5<sup>m</sup>. 30<sup>s</sup>, 10<sup>m</sup>. 4<sup>s</sup>, 11<sup>m</sup>. 17<sup>s</sup>, 15<sup>m</sup>. 39<sup>s</sup>, 21<sup>m</sup>. 3<sup>s</sup>. Molyneux slow, 1<sup>m</sup>. 15<sup>s</sup>. (f) All the observations reckoned good except this, at which the star was unsteady. (g) Clouded; barely visible. (h) Steady. (i) The mercury unsteady.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	"					
Sept. 29	(a) Polaris R.....	4. 18,4	14,0	16,0	15,1	13,7	13,2	+7,3	10,770		328. 18. 59,51	29,286	49,7	46,0	42,26	1. 28. 39,94		T.	
	(a) Polaris R.....	...	...	...	...	...	...		10,810		328. 18. 59,13					1. 28. 40,32		T.	
	(a) Polaris R.....	3. 61,0	57,1	58,0	57,6	56,6	56,1		9,981		328. 18. 58,50					1. 28. 40,95		T.	
	(a) Polaris .....	3. 31,3	26,0	28,0	25,8	24,9	26,3		9,981		75. 43. 29,35					1. 28. 41,38		T.	
	(a) Polaris .....	...	...	...	...	...	...		10,060		75. 43. 28,62					1. 28. 40,65		T.	
	(a) Polaris .....	...	...	...	...	...	...		8,219		75. 43. 28,61					1. 28. 40,64		T.	
	ν Piscium.....	2. 47,9	43,3	44,2	43,3	42,6	43,7				159. 28. 34,48	29,286	49,7	46,2	62,62	85. 15. 31,39		T.	
	ν N.L.....	3. 54,4	50,0	53,9	51,0	51,0	49,9		9,627	-2	158. 38. 53,97				60,84	84. 25. 47,40		T.	
	ν N.L.....	...	...	...	...	...	...		9,809	-1	158. 38. 53,41					84. 25. 47,69		T.	
	ν N.L.....	...	...	...	...	...	...		10,023		158. 38. 52,22					84. 25. 47,35		T.	
	ν N.L.....	...	...	...	...	...	...		10,157	+1	158. 38. 53,57					84. 25. 48,70		T.	
	ν N.L.....	...	...	...	...	...	...		10,400	+2	158. 38. 52,69					84. 25. 47,82		T.	
Sept. 30	(b) ⊙ S.L.....	1. 8,9	7,6	6,1	7,1	6,9	4,4	+6,5	9,093		167. 26. 25,98	29,460	56,2	55,0	82,28	93. 13. 42,95		T.	
	(c) ⊙ N.L.....	4. 10,8	11,2	6,9	8,0	7,7	8,1		9,093		166. 54. 27,51				80,68	92. 41. 42,88		T.	
	α Ursæ Majoris R.	0. 34,8	32,4	29,1	31,1	28,0	30,5		8,771		302. 20. 56,73	29,491	51,7	51,0	10,46	27. 27. 14,12		T.	
	α Ursæ Majoris ..	1. 9,7	5,1	5,5	4,2	3,6	3,3		8,771	+0¾	101. 41. 31,27					27. 27. 15,50		T.	
Oct. 1	⊙ N.L.....	1. 50,8	50,6	47,0	49,4	47,9	48,0		7,403		167. 17. 43,48	29,492	55,5	54,0	82,09	93. 5. 0,26		T.	
	⊙ S.L.....	3. 48,0	51,0	47,5	49,9	47,9	46,2		7,403		167. 49. 43,38				83,74	93. 37. 1,81		T.	
	(d) Polaris SP. R....	2. 18,5	14,7	14,0	14,0	12,9	13,6		12,746		331. 16. 17,94	29,484	54,5	55,1	46,45	- 1. 28. 43,08		T.	
	(d) Polaris SP. R....	...	...	...	...	...	...		12,720		331. 16. 18,41					- 1. 28. 43,55		T.	
	(d) Polaris SP. R....	2. 18,8	14,9	15,0	13,3	13,1	13,8		12,769		331. 16. 17,99					- 1. 28. 43,13		T.	
	(d) Polaris SP.....	2. 13,0	10,4	8,4	7,6	8,7	8,0		12,769		72. 46. 9,50					- 1. 28. 42,26		T.	
	(d) Polaris SP.....	...	...	...	...	...	...		12,691		72. 46. 9,90					- 1. 28. 41,86		T.	
	(d) Polaris SP.....	1. 44,0	44,0	40,9	41,0	41,9	40,0		11,039		72. 46. 10,98					- 1. 28. 40,78		T.	
	(e) B.A.C. 6982.....	0. 34,2	33,3	32,2	31,8	32,0	33,2				189. 50. 32,90	29,434	48,4	47,5	260,93	115. 40. 48,52		T.	
	H. C. 38974.....	...	...	...	...	...	...		11,927	+1	189. 49. 52,65				260,69	115. 40. 8,03		T.	
	(e)(c)ρ Capricorni ....	4. 8,2	8,9	6,0	6,2	6,7	7,3			+1½	182. 29. 6,91				161,09	108. 17. 42,69		T.	
	Oct. 2	(f) Polaris SP. R....	1. 43,0	41,8	40,1	39,9	40,0	39,7		11,132		331. 16. 17,85	29,348	54,6	54,1	46,33	- 1. 28. 42,87		T.
(f) Polaris SP. R....		...	...	...	...	...	...		11,122		331. 16. 17,87					- 1. 28. 42,89		T.	
(f) Polaris SP.....		1. 14,3	14,0	10,9	11,4	10,6	12,0		10,100		72. 46. 9,83					- 1. 28. 41,81		T.	
(f) Polaris SP.....		...	...	...	...	...	...		10,070		72. 46. 10,22					- 1. 28. 41,42		T.	
Oct. 4	Zenith Point.....	1. 52,7	50,9	47,9	48,4	47,9	47,4		11,740		112. 1. 13,31							T.	
Oct. 5	Neptune.....	0. 29,0	29,0	26,7	27,9	27,3	27,9				173. 10. 28,07	29,376	48,9	47,6	104,10	98. 58. 6,86		T.	
Oct. 6	⊙ S.L.....	0. 57,5	57,0	54,6	56,9	56,0	55,5		11,161		169. 45. 32,22	29,506	50,5	51,0	90,69	95. 32. 57,60		T.	
	⊙ N.L.....	3. 56,1	52,9	54,8	53,6	53,9	51,3		11,161		169. 13. 30,41				88,85	95. 0. 53,95		T.	
	(g) H. C. 39031.....	1. 37,4	37,3	35,0	34,5	35,0	35,3				188. 6. 36,10	29,638	46,9	43,9	231,96	113. 56. 22,75		T.	
	ρ Capricorni.....	2. 40,9	38,9	38,8	38,5	38,4	37,8		20,037		182. 29. 10,16				163,43	108. 17. 48,28		T.	
	B.A.C. 7044.....	...	...	...	...	...	...				182. 32. 39,45				163,94	108. 21. 18,08		T.	
	Neptune.....	0. 57,6	56,4	55,1	56,1	55,1	56,0				173. 10. 56,25	29,649	45,0	44,0	105,88	98. 58. 36,82		T.	
Oct. 7	(h) ⊙ S.L.....	3. 32,0	30,4	31,9	31,1	29,4	30,1	+7,6			170. 8. 31,70	29,772	48,4	48,7	93,31	95. 56. 0,28		T.	
	B.A.C. 6907.....	3. 41,6	39,0	42,6	39,3	39,0	38,6				179. 38. 40,93	29,850	46,0	43,5	142,31	105. 26. 58,51		T.	
	H. C. 38765.....	4. 6,0	3,9	7,5	4,6	2,9	2,5				181. 29. 5,60				156,18	107. 17. 37,05		T.	
	α² Capricorni.....	1. 49,0	48,9	50,5	47,3	47,9	45,9				177. 11. 48,70				126,83	102. 59. 50,80		T.	
	H. C. 39125.....	1. 63,0	61,5	63,6	60,4	60,3	59,8				180. 27. 1,93		43,5	148,11	106. 15. 25,31		T.		
	H. C. 39350.....	3. 60,0	56,0	58,2	55,1	55,9	55,2			+1	185. 33. 57,67				197,11	111. 23. 10,05		T.	
	Neptune.....	1. 23,9	21,9	22,0	21,5	19,3	21,7				173. 11. 22,05	29,874	43,9	41,9	107,19	98. 59. 4,51		T.	
Oct. 9	⊙ S.L.....	4. 16,8	15,9	16,9	15,9	13,1	15,0				170. 54. 16,67	29,900	45,3	46,1	97,05	96. 41. 48,99		T.	
Oct. 11	⊙ N.L.....	2. 30,5	28,8	29,0	26,9	27,6	27,9		9,572		171. 7. 37,99	30,048	50,6	54,5	96,70	96. 55. 9,96		T.	
	⊙ S.L.....	4. 36,9	32,8	36,5	32,8	34,0	31,5		9,572		171. 39. 44,15				98,77	97. 27. 18,19		T.	
	Zenith Point.....	1. 13,5	14,4	10,2	11,2	10,0	11,0		9,966		112. 1. 12,73							T.	

ONE REVOLUTION of the MICROMETER = 20",852.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.

(a) Times by Molyneux, 1<sup>h</sup>. 1<sup>m</sup>. 45<sup>s</sup>, 3<sup>m</sup>. 43<sup>s</sup>, 8<sup>m</sup>. 23<sup>s</sup>, 9<sup>m</sup>. 34<sup>s</sup>, 11<sup>m</sup>. 15<sup>s</sup>, 16<sup>m</sup>. 25<sup>s</sup>. Molyneux slow, 1<sup>m</sup>. 33<sup>s</sup>. (b) Clouds passing. (c) Negative correction for Runs. (d) Times by Molyneux, 13<sup>h</sup>. 3<sup>m</sup>. 27<sup>s</sup>, 5<sup>m</sup>. 38<sup>s</sup>, 7<sup>m</sup>. 46<sup>s</sup>, 12<sup>m</sup>. 1<sup>s</sup>, 13<sup>m</sup>. 34<sup>s</sup>, 18<sup>m</sup>. 43<sup>s</sup>. Molyneux slow by a circle transit of β Aquilæ Oct. 1, 1<sup>m</sup>. 38<sup>s</sup>. (e) Cloudy. (f) Very unsteady. Times by Molyneux, 13<sup>h</sup>. 2<sup>m</sup>. 17<sup>s</sup>, 3<sup>m</sup>. 10<sup>s</sup>, 8<sup>m</sup>. 4<sup>s</sup>, 8<sup>m</sup>. 46<sup>s</sup>. Molyneux slow, 1<sup>m</sup>. 39<sup>s</sup>. (g) Faint from cloud. (h) The reading of Microscope A has been increased 1'. N.L. was lost by accidental hinderance of the microscope bisections.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ex.					
		"	"	"	"	"	"						"	"		"	"	"	
Oct. 11	(a) B. (w.) XXII. 119.	4. 38,4	39,9	36,5	37,7	38,0	39,3	+7,6			170 29. 38,20	30,188	48,2	46,0	96,44	96. 17. 9,91	T.		
	B. (w.) XXII. 230.	1. 10,7	11,0	9,6	9,0	10,4	8,2			+2	176. 51. 9,99				125,63	102. 39. 10,89	T.		
	B. (w.) XXII. 415.	3. 10,9	9,0	10,2	7,9	9,3	6,9				177. 13. 19,82				127,74	103. 1. 22,83	T.		
	B. (w.) XXII. 420.	...	...	...	...	...	...		7,931	+2½	177. 14. 2,74				127,81	103. 2. 5,82	T.		
	(b) B. (w.) XXII. 548.	1. 4,2	3,9	4,2	3,1	4,0	2,9				169. 51. 3,98		45,0		94,26	95. 38. 33,51	T.		
	B. (w.) XXII. 672.	3. 15,8	13,6	14,9	13,9	13,9	13,0				174. 33. 15,00				113,90	100. 21. 4,17	T.		
	(c) B. (w.) XXII. 774.	2. 15,8	14,0	14,1	12,9	13,1	14,0		17,054	+2	173. 59. 47,35				111,27	99. 47. 33,89	T.		
	B. (w.) XXII. 776.	...	...	...	...	...	...				174. 2. 14,55				111,46	99. 50. 1,28	T.		
	Neptune.....	3. 8,9	7,0	8,0	5,9	6,9	5,9				173. 13. 7,88	30,196	47,7	44,7	107,84	99. 0. 50,99	T.		
	B. (w.) XXII. 1007.	2. 59,6	57,0	60,1	57,1	58,1	56,0				176. 2. 58,73				121,59	101. 50. 55,59	T.		
(d) B. (w.) XXII. 1101.	2. 50,0	48,0	49,1	46,1	49,1	46,5		14,639	+2¼	167. 11. 12,07				85,32	92. 58. 32,66	T.			
B. (w.) XXII. 1110.	...	...	...	...	...	...				167. 12. 48,85				85,40	93. 0. 9,52	T.			
(e) Massilia .....	3. 52,9	51,0	53,3	50,2	53,0	49,0		8,832		164. 34. 16,91	30,206	47,3	45,3	77,49	90. 21. 29,67	T.			
Oct. 12	(f) ☉ N.L.....	0. 24,4	27,7	23,4	24,3	24,5	25,1		10,613	+4	171. 30. 10,86	30,324	49,5	52,5	99,45	97. 17. 45,58	T.		
	(g) Fortuna .....	1. 40,2	38,5	39,7	37,6	39,2	39,1		9,870		175. 6. 42,18	30,356	43,9	41,6	118,12	100. 54. 35,57	T.		
	(a) B. (w.) XXII. 119.	4. 37,6	38,7	6,0	37,6	37,9	38,9				170. 29. 37,68				97,36	96. 17. 10,81	T.		
	(h) B. (w.) XXII. 208.	1. 35,8	36,7	36,9	35,1	36,2	36,1				177. 1. 36,53				128,49	102. 49. 40,29	T.		
	B. (w.) XXII. 315.	1. 8,8	7,3	8,2	6,2	7,2	6,8				169. 26. 7,70				93,95	95. 13. 36,92	T.		
	B. (w.) XXII. 417.	3. 62,0	60,2	62,9	59,6	60,7	59,1				170. 59. 1,77				99,76	96. 46. 36,80	T.		
	B. (w.) XXII. 517.	4. 28,9	25	30,4	26,0	26,5	25,9				173. 14. 28,28	30,360	43,1	41,0	109,36	99. 2. 12,91	T.		
	(b) B. (w.) XXII. 617.	1. 32,0	31,7	31,6	30,3	30,2	30,5				176. 41. 31,43				126,74	102. 29. 33,44	T.		
	B. (w.) XXII. 708.	1. 46,2	46,8	46,0	44,3	47,5	46,5				177. 11. 46,67				129,66	102. 59. 51,60	T.		
	(i) B. (w.) XXII. 776.	2. 13,6	11,0	12,4	10,8	11,9	11,9			+3	174. 2. 12,25				113,02	99. 50. 0,54	T.		
	(a) B. (w.) XXII. 881.	4. 37,0	37,5	35,1	35,9	36,0	35,9				176. 19. 36,13				124,71	102. 7. 36,11	T.		
	Neptune.....	3. 33,3	31,2	33,9	29,8	31,6	30,8			+2¼	173. 13. 32,53	30,362	43,4	40,4	109,44	99. 1. 17,24	T.		
	B. (w.) XXII. 1101.	1. 12,2	11,4	12,1	9,3	10,9	11,0				167. 11. 11,45				86,56	92. 58. 33,28	T.		
	B. (w.) XXII. 1110.	...	...	...	...	...	...		5,406		167. 12. 47,24				86,65	93. 0. 9,16	T.		
	B. (w.) XXII. 1237.	0. 29,5	28,4	27,9	26,2	28,1	27,6				167. 5. 28,07				86,26	92. 52. 49,60	T.		
	(a) Massilia.....	4. 50,9	36,1	34,3	34,2	34,3	36,0				164. 39. 35,03	30,357	41,8	39,9	79,00	90. 26. 49,30	T.		
Oct. 13	☉ S.L. ....	3. 44,5	45,9	44,8	43,4	44,0	42,1		7,073		172. 24. 46,08	30,336	48,0	51,3	103,43	98. 12. 24,78	T.		
	☉ N.L.....	1. 40,6	41,8	39,2	39,9	38,3	38,2		7,073		171. 52. 41,13				101,24	97. 40. 17,64	T.		
Oct. 18	☉ N.L.....	2. 36,8	34,1	35,1	33,0	33,6	33,8	+7,6	8,259		173. 43. 11,35	30,188	50,9	52,8	108,24	99. 30. 53,96	T.		
	(a) ☉ S.L.....	4. 44,2	43,6	41,9	42,8	43,4	44,8		8,259	+1½	174. 15. 19,23				110,69	100. 3. 4,29	T.		
	Zenith Point....	1. 22,8	22,0	18,2	18,4	16,9	19,4		10,303		112. 1. 13,63								
	(k) ☉ S.L.....	3. 40,9	39,4	40,8	39,1	40,4	36,7		9,329	-2	189. 13. 54,55	30,264	51,0	51,5	253,48	115. 4. 2,40	T.		
	☉ S.L.....	...	...	...	...	...	...		9,324	-1	189. 13. 54,56					115. 4. 2,41	T.		
	☉ S.L.....	...	...	...	...	...	...		9,349		189. 13. 54,05					115. 4. 1,90	T.		
	☉ S.L.....	...	...	...	...	...	...		9,303	+1	189. 13. 54,77					115. 4. 2,62	T.		
	☉ S.L.....	...	...	...	...	...	...		9,342	+2	189. 13. 53,58					115. 4. 1,43	T.		
	☉ Sagittarii.....	2. 50,5	50,0	48,8	48,1	49,1	46,6			+2	186. 7. 49,33			51,0	103,91	111. 57. 7,61	T.		
	☉ Sagittarii.....	0. 61,7	61,5	59,1	60,0	59,9	59,9				185. 26. 0,60				195,11	111. 15. 10,08	T.		
	H. C. 41785.....	0. 53,7	53,0	52,0	51,4	52,7	52,1			+2	179. 15. 52,54	30,308	48,5	46,0	141,10	105. 4. 8,01	T.		
	B. (w.) XXI. 675.	4. 20,3	18,0	20,9	17,6	17,6	17,0				173. 54. 19,65				111,05	99. 42. 5,07	T.		
	B. (w.) XXI. 1023.	0. 39,8	39,3	38,1	38,0	39,0	37,7				174. 55. 38,80				115,94	100. 43. 29,11	T.		
	B.A.C. 7639.....	1. 57,6	56,4	56,6	55,1	57,2	55,3				182. 46. 56,85				169,10	108. 35. 40,32	T.		
	B. (w.) XXI. 1206.	1. 56,2	56,0	56,2	54,0	56,5	53,0			+3	177. 51. 55,47				132,07	103. 40. 1,91	T.		
	(l)(m) Fortuna.....	1. 20,3	19,8	18,7	17,9	19,0	19,4		9,478		175. 6. 30,40	30,316	48,3	45,5	117,00	100. 54. 21,77	T.		
	(a) B. (w.) XXII. 119.	4. 38,0	40,4	37,0	38,1	38,4	38,5				170. 29. 38,30				96,95	96. 17. 9,62	T.		
	(m) B. (w.) XXII. 208.	1. 37,8	37,9	37,2	36,2	38,9	35,7				177. 1. 37,68				127,29	102. 49. 39,34	T.		
	B. (w.) XXII. 304.	3. 57,0	55,9	58,0	55,1	56,2	53,9				179. 8. 57,02				140,50	104. 57. 11,89	T.		
	B. (w.) XXII. 417.	3. 61,2	59,4	62,5	58,5	60,2	56,9				170. 59. 0,78	30,322	44,8		98,99	96. 46. 34,14	T.		
	B. (w.) XXII. 519.	0. 51,0	51,7	49,9	48,5	51,0	47,9				171. 25. 50,20				100,74	97. 13. 25,31	T.		
	B. (w.) XXII. 617.	1. 31,9	31,2	31,9	30,8	31,2	30,7				176. 41. 31,67				125,59	102. 29. 31,63	T.		
	B. (w.) XXII. 694.	1. 22,1	22,9	21,9	20,4	20,9	20,9			+2½	171. 46. 21,74				102,12	97. 33. 58,23	T.		
	B. (w.) XXII. 797.	3. 35,0	33,9	34,8	31,9	33,9	31,8				177. 58. 34,45				133,15	103. 46. 41,97	T.		
	(n) B. (w.) XXII. 912.	0. 55,5	55,1	54,5	53,8	54,9	53,0		6,632	+2	173. 17. 4,83	30,324	47,5	44,4	108,66	99. 4. 47,86	T.		

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'Only one star.' (c) 'This preceded.' (d) 'The preceding star: there was a third in the south-preceding quarter.' (e) Extremely faint from cloud. (f) Loss of S.L. and decay by wrong setting. (g) Too faint for bisecting with certainty. (h) 'A very faint star precedes.' (i) The southern of two. (k) This limb was rugged, but appeared to be more fully illumined than the other. A bright point at the cusp was bisected. (l) 'The south-following of two equal objects 20' apart.' (m) Extremely faint. (n) 'Preceded the next object about 10'.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"					Inch.	"	"			
Oct. 18	Neptune.....	0.55,5	55,1	54,5	53,8	54,9	53,0	+7,6			173.15.54,70	30,324	47,5	44,4	108,57	99.3.37,64	T.
	B.A.C. 7993.....	3.13,9	12,2	14,3	11,5	13,0	11,4				169.48.13,53				94,63	95.35.42,53	T.
	B.(w.) XXIII. 1216	2.29,9	28,8	30,2	28,2	28,6	27,1				169.22.29,42				93,07	95.9.56,86	T.
	(a) Polaris SP. R....	1.22,2	19,7	19,0	18,6	18,0	20,0		10,601		331.16.7,40	30,424	50,0	51,0	48,32	-1.28.34,09	T.
	(a) Polaris SP. R....	...	...	...	...	...	...		10,586		331.16.7,76					-1.28.34,45	T.
	(a) Polaris SP. R....	0.56,0	53,9	52,3	51,1	52,3	52,6		9,293		331.16.9,05					-1.28.35,74	T.
	(a) Polaris SP.....	1.22,3	20,8	18,5	16,4	19,2	19,0		9,981		72.46.17,77					-1.28.36,18	T.
	(a) Polaris SP.....	...	...	...	...	...	...		9,950		72.46.17,95					-1.28.36,00	T.
	(a) Polaris SP.....	0.58,0	58,8	54,4	55,0	56,8	56,4		8,660		72.46.18,85					-1.28.35,10	T.
Oct. 19	☉ S.L.....	1.15,0	14,1	13,8	13,9	13,4	13,5		7,773		174.37.0,71	30,418	50,5	51,9	113,45	100.24.48,53	T.
	☉ N.L.....	4.7,1	4,8	6,8	4,0	5,0	4,1		7,773		174.4.52,77				110,92	99.52.38,06	T.
	) S.L.....	1.12,3	10,8	9,5	9,7	9,0	10,0		10,069	-2	188.41.6,94	30,406	49,5	47,0	246,61	114.31.7,92	T.
	) S.L.....	...	...	...	...	...	...		10,150	-1	188.41.6,38					114.31.7,36	T.
	) S.L.....	...	...	...	...	...	...		10,213		188.41.6,08					114.31.7,06	T.
	) S.L.....	...	...	...	...	...	...		10,320	+1	188.41.4,72					114.31.5,70	T.
	) S.L.....	...	...	...	...	...	...		10,325	+2	188.41.5,36					114.31.6,34	T.
	(b) Fortuna.....	1.17,2	16,0	15,8	14,9	15,1	16,4		11,170		175.5.51,82	30,398	46,0	44,5	117,50	100.53.43,69	T.
	(c) B.(w.) XXII. 208.	1.39,0	38,0	38,9	37,2	38,1	36,9			+2	177.1.38,29				127,89	102.49.40,55	T.
	B.(w.) XXII. 343	2.34,7	33,5	34,0	32,2	32,5	32,2				178.7.33,83				134,50	103.55.42,70	T.
	(c) B.(w.) XXII. 444.	0.45,0	45,3	44,2	44,0	45,8	43,0				177.10.44,73		44,0		128,91	102.58.48,01	T.
	B.(w.) XXII. 548.	1.3,9	2,1	3,3	1,1	2,6	2,2				169.51.2,80				95,11	95.38.32,28	T.
	(c) B.(w.) XXII. 672.	3.15,8	12,0	14,1	12,0	13,3	11,1				174.33.13,87				114,93	100.21.3,17	T.
	(d)(e) B.(w.) XXII. 774	4.50,1	49,6	47,0	47,9	49,1	47,0				173.59.48,40				112,27	99.47.35,04	T.
	(f) B.(w.) XXII. 912	1.18,3	17,5	17,9	16,0	16,2	16,0		7,562		173.17.8,14	30,388	46,1	44,0	108,98	99.4.51,49	T.
	Neptune.....	...	...	...	...	...	...				173.16.17,30				108,92	99.4.0,59	T.
	H.C. 44849.....	2.9,1	7,7	9,0	6,9	8,1	6,8				178.32.8,47				137,20	104.20.20,04	T.
	B.(w.) XXII. 1011	1.13,3	12,7	12,0	11,1	11,9	11,5				167.11.12,38				85,98	92.58.32,73	T.
	α Pegasi.....	3.24,4	22,0	23,3	20,0	21,2	19,7				149.48.22,62				46,47	75.35.3,46	T.
	(g) Massilia.....	3.38,0	36,0	38,6	34,6	36,2	34,9				165.13.37,30	30,380	46,0	44,6	79,91	91.0.51,58	T.
Oct. 20	☉ N.L.....	1.27,0	29,2	26,4	27,5	26,3	25,9				174.26.27,42	30,260	53,0	54,5	111,43	100.14.13,22	T.
	B.A.C. 6992.....	1.29,2	28,3	27,5	27,3	27,5	26,9				179.26.28,15	30,162	48,6	45,5	141,78	105.14.44,30	T.
	β Capricorni.....	...	...	...	...	...	...		10,518		179.26.17,35				141,76	105.14.33,48	T.
	B.A.C. 7049.....	3.4,7	2,9	4,9	2,9	4,0	2,2			+2	187.3.4,12				218,46	112.52.36,95	T.
	B.(w.) xx. 664.	3.19,0	17,7	19,9	17,2	16,9	15,3				179.8.18,50				139,72	104.56.32,59	T.
	υ Capricorni.....	0.32,0	31,0	30,9	29,2	30,7	31,2				182.50.30,97	30,162	48,1	44,7	169,29	108.39.14,63	T.
	H.C. 39981.....	3.12,9	11,9	13,3	10,0	10,7	9,3				184.3.12,15				181,32	109.52.7,84	T.
	) S.L.....	1.37,2	37,9	36,9	36,4	37,1	35,9		9,999	-2	186.46.33,39				214,81	112.36.2,57	T.
	) S.L.....	...	...	...	...	...	...		10,069	-1	186.46.33,95					112.36.3,13	T.
	) S.L.....	...	...	...	...	...	...		10,239		186.46.32,32					112.36.1,50	T.
	) S.L.....	...	...	...	...	...	...		10,311	+1	186.46.32,60					112.36.1,78	T.
	) S.L.....	...	...	...	...	...	...		10,401	+2	186.46.32,39					112.36.1,57	T.
	19 Capricorni...	0.2,2	2,0	0,7	0,2	1,7	1,1				182.40.1,32				167,68	108.28.43,37	T.
	(h) B.(w.) xx. 1305.	0.28,2	27,9	28,0	25,1	26,8	26,0				176.15.27,12				122,56	102.3.24,05	T.
	η Capricorni.....	2.4,4	2,9	3,5	1,6	3,0	1,5				184.37.3,33		43,7			110.26.5,56	T.
Oct. 23	☉ S.L.....	2.25,1	25,0	24,2	25,8	24,4	23,0		10,230		176.2.20,38	29,650	56,0	57,5	116,24	101.50.10,99	T.
	☉ N.L.....	0.14,6	15,8	11,9	16,1	14,6	14,0		10,230		175.30.9,77				113,56	101.17.57,70	T.
	Neptune.....	2.40,0	38,0	39,4	37,0	37,1	36,7				173.17.38,70	29,622	48,0	46,9	105,64	99.5.18,71	T.
	φ Aquarii.....	2.59,5	58,1	60,1	58,2	57,3	56,6				171.2.59,05	29,622	48,0	45,5	96,81	96.50.30,23	T.
	) S.L.....	4.11,5	8,1	12,2	8,9	8,7	9,0		9,984	-2	175.29.4,54				116,19	101.16.55,10	T.
	) S.L.....	...	...	...	...	...	...		10,149	-1	175.29.4,41					101.16.54,97	T.
	) S.L.....	...	...	...	...	...	...		10,359		175.29.3,29					101.16.53,85	T.
	) S.L.....	...	...	...	...	...	...		10,563	+1	175.29.2,24					101.16.52,80	T.
	) S.L.....	...	...	...	...	...	...		10,704	+2	175.29.2,45					101.16.53,01	T.
Nov. 2	(i) Hygeia.....	3.9,6	9,3	8,6	6,2	7,6	3,8	+5,9	9,664		138.23.15,13	29,542	53,4	50,0	28,55	64.9.39,45	T.

ONE REVOLUTION of the MICROMETER = 20",852. - ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Very steady. Times by Molyneux, 13<sup>h</sup>. 6<sup>m</sup>. 7<sup>s</sup>. 6<sup>m</sup>. 58<sup>s</sup>. 10<sup>m</sup>. 26<sup>s</sup>. 12<sup>m</sup>. 39<sup>s</sup>. 13<sup>m</sup>. 18<sup>s</sup>. 16<sup>m</sup>. 40<sup>s</sup>. Molyneux slow, 40<sup>s</sup>. (b) Bisection very uncertain, the eye-piece being covered with moisture. (c) Faint from cloud, and the bisections doubtful. (d) 'A very faint star nearly south of this.' (e) Negative correction for Runs. (f) Faint. 'The next object followed about 5<sup>m</sup>.' (g) 'Another object of nearly the same R.A.,' which had been observed on Oct. 18 by mistake for the Planet. (h) Faint. (i) Bad circumstances, the Microscopes dripping with moisture and the eye-piece misty.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refractio.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						Inch.	"			
Nov. 3	Hygeia .....	4. 10,9	8,7	10,3	6,9	6,9	3,0	+5,9			138. 24. 8,58	29,734	51,0	43,0	29,17	64. 10. 33,52	T.
Nov. 4	(a) ☉ S.L. ....	3. 44,9	42,0	45,3	43,5	42,8	42,2		8,081	+2½	179. 59. 23,39	29,812	52,0	50,9	142,36	105. 47. 41,52	T.
	☉ N.L. ....	1. 30,9	30,3	29,0	30,3	28,0	28,0		8,081	+4	179. 27. 8,20				138,66	105. 15. 22,63	T.
	Neptune .....	0. 34,5	35,0	33,1	34,0	31,4	33,6				173. 20. 33,72	29,742	48,9	46,5	106,37	99. 8. 15,86	T.
Nov. 6	☉ N.L. ....	2. 26,1	25,1	24,0	25,2	23,4	23,2		7,266		180. 3. 21,98	29,728	51,7	51,0	142,40	105. 51. 40,15	T.
	(b) ☉ S.L. ....	4. 44,1	45,5	40,9	43,3	42,0	41,1		7,266		180. 35. 39,78				146,29	106. 24. 1,84	T.
Nov. 8	(c) ☉ S.L. ....	0. 43,0	44,0	39,5	43,1	42,0	41,9		9,617		181. 10. 50,37	29,968	60,3	63,6	148,10	106. 59. 14,24	T.
	☉ N.L. ....	3. 28,2	26,7	26,0	25,0	24,1	25,1		9,617	+1½	180. 33. 34,10				144,08	106. 26. 53,95	T.
	Zenith Point ....	1. 14,2	11,6	9,0	9,0	7,1	9,7		9,909		112. 1. 12,23						T.
Nov. 10	☉ N.L. ....	2. 51,3	50,9	50,7	49,0	49,1	48,1		10,921		181. 12. 31,20	30,010	50,0	46,5	153,80	107. 1. 0,77	T.
	☉ S.L. ....	0. 9,9	10,7	7,0	7,7	6,7	6,1		10,921		181. 44. 48,85				158,19	107. 33. 22,81	T.
Nov. 15	(d) ☉ S.L. ....	3. 47,9	47,1	49,3	46,7	47,9	44,3	+8,3	7,257		183. 4. 45,45	29,010	51,3	52,4	162,41	108. 53. 24,48	T.
	☉ N.L. ....	1. 28,9	30,2	29,4	28,2	28,9	27,4		7,257		182. 32. 26,45				157,66	108. 21. 0,73	T.
	(e) ☉ S.L. ....	3. 23,1	21,3	23,0	20,1	21,0	18,8		7,864	+2	189. 19. 7,41	29,038	51,8	52,0	244,64	115. 9. 8,67	T.
Nov. 16	Zenith Point ....	1. 9,4	8,2	5,1	4,9	4,1	4,6		9,759		112. 1. 11,38						T.
	(b) H. C. 44423. ....	4. 49,9	52,9	48,1	48,7	51,0	48,0				167. 39. 49,72	28,910	52,5	52,0	81,93	93. 27. 8,27	T.
	Neptune .....	1. 45,7	46,0	45,0	44,6	44,2	42,1				173. 21. 45,08				102,33	99. 9. 24,03	T.
	B. (w.) xxii. 981. ....	1. 47,6	47,9	47,0	46,7	47,0	45,9				174. 21. 47,50				106,67	100. 9. 30,79	T.
Nov. 17	(a) ☉ N.L. ....	0. 59,0	58,1	57,0	59,4	56,0	58,0		6,841		183. 2. 4,05	29,102	54,1	53,6	162,11	108. 50. 42,78	T.
	☉ S.L. ....	3. 17,9	16,1	16,2	18,0	13,2	15,8		6,841		183. 34. 22,97				167,09	109. 23. 6,68	T.
	☉ S.L. ....	1. 19,9	19,4	18,8	18,3	17,9	19,0		8,698	-2	185. 11. 41,46	29,144	49,0	46,5	186,90	111. 0. 44,98	T.
	☉ S.L. ....	...	...	...	...	...	...		8,809	-1	185. 11. 41,68				...	111. 0. 45,20	T.
	☉ S.L. ....	...	...	...	...	...	...		8,899		185. 11. 42,21				...	111. 0. 45,73	T.
	☉ S.L. ....	...	...	...	...	...	...		9,042	+1	185. 11. 41,54				...	111. 0. 45,06	T.
	☉ S.L. ....	...	...	...	...	...	...		9,162	+2	185. 11. 41,23				...	111. 0. 44,75	T.
	(f) Neptune .....	1. 47,1	45,0	46,3	44,9	44,0	44,7				173. 21. 45,82	29,148	48,3	46,0	104,45	99. 9. 26,89	T.
	(f) θ Persei R. ....	4. 24,4	20,3	24,7	20,0	19,0	19,0		9,301	+0½	288. 24. 36,97	29,146	46,9	44,4	3,63	41. 23. 46,04	T.
	θ Persei .....	2. 34,8	32,0	33,1	30,0	29,1	29,0		9,301	+2½	115. 37. 47,67				...	41. 23. 47,92	T.
	(g) Hygeia .....	0. 32,9	32,2	31,1	28,9	28,8	29,5		11,040		138. 45. 9,01	29,144	46,9	44,5	28,94	64. 31. 34,57	T.
	(h) * R. 4 <sup>h</sup> . 49 <sup>m</sup> . 11 <sup>s</sup> ..	2. 11,9	10,0	10,5	7,1	7,6	7,5			-2	138. 22. 9,99				28,46	64. 8. 35,07	T.
	(h) * R. 4 <sup>h</sup> . 50 <sup>m</sup> . 31 <sup>s</sup> ..	2. 9,7	8,1	8,9	6,8	5,9	5,0				138. 12. 7,98				28,25	63. 58. 32,85	T.
	(i) ☉ S.L. ....	3. 37,0	35,0	36,1	35,2	32,7	34,0		9,811	+4	183. 48. 38,39	29,316	48,5	47,5	172,80	109. 37. 27,81	T.
	(k) α Pegasi R. ....	3. 48,0	45,0	47,7	43,4	45,0	44,0		9,319		254. 14. 0,75	29,528	42,1	40,6	45,48	75. 35. 4,11	T.
	α Pegasi .....	3. 11,1	9,1	11,0	7,9	6,1	7,0		9,319		149. 48. 23,77				...	75. 35. 5,87	T.
Nov. 18	Hygeia .....	2. 15,0	11,9	13,2	8,7	8,0	10,1				138. 47. 11,77	29,652	40,6	38,0	29,89	64. 33. 38,28	T.
	(h) * R. 4 <sup>h</sup> . 49 <sup>m</sup> . 11 <sup>s</sup> ..	2. 13,0	9,0	11,4	6,1	6,1	5,9				138. 22. 9,17				29,35	64. 8. 35,14	T.
	(h) * R. 4 <sup>h</sup> . 50 <sup>m</sup> . 31 <sup>s</sup> ..	2. 8,8	6,2	9,3	3,9	3,0	3,7				138. 12. 6,40				29,13	63. 58. 32,15	T.
	(b) ☉ N.L. ....	4. 63,0	65,0	61,0	63,9	59,7	61,9		9,487		183. 30. 13,12	29,676	45,1	45,0	172,76	109. 19. 2,50	T.
	☉ S.L. ....	2. 24,6	23,6	24,6	23,1	20,0	22,6		9,487		184. 2. 34,43				178,20	109. 51. 29,25	T.
Nov. 19	(g) Hygeia .....	4. 9,4	8,0	11,0	5,1	5,9	3,2		9,954		138. 49. 9,19	29,512	48,6	47,1	29,23	64. 35. 35,04	T.
	Calliope .....	0. 37,8	37,0	36,9	33,6	34,9	33,2		10,005		139. 30. 35,63	29,514	47,1	45,1	30,24	65. 17. 2,49	T.
	(b) H. C. 10056. ....	4. 31,0	31,8	29,6	27,9	27,9	27,8		10,005	+1	139. 24. 29,15				30,11	65. 10. 55,88	T.
Nov. 20	(l) ψ <sup>3</sup> Aquarii .....	2. 13,4	11,0	11,0	10,9	10,0	9,5				174. 37. 11,57	29,286	50,0	49,6	109,77	100. 24. 57,96	T.
	(m) ☉ S.L. ....	2. 24,7	24,5	22,7	22,1	21,9	20,5		9,830	-2	172. 27. 20,13	29,285	49,6	49,6	100,38	98. 14. 57,13	T.
	☉ S.L. ....	...	...	...	...	...	...		9,942	-1	172. 27. 21,21				...	98. 14. 58,21	T.
	☉ S.L. ....	...	...	...	...	...	...		10,099		172. 27. 21,31				...	98. 14. 58,31	T.
	☉ S.L. ....	...	...	...	...	...	...		10,200	+1	172. 27. 22,55				...	98. 14. 59,55	T.
	☉ S.L. ....	...	...	...	...	...	...		10,411	+2	172. 27. 21,45				...	98. 14. 58,45	T.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) The Sun had been shining on the instrument. (b) Negative correction for Runs. (c) Cloudy. (d) The circle quite damp, and microscope readings somewhat uncertain. (e) So clouded as to be traceable only at times: this bisection very uncertain. (f) Barely visible from cloud. (g) Extremely faint. (h) Observed the same days with the Transit. (i) Accidental delay. (k) Too much wind. (l) Great indefiniteness. (m) Dense cloud: the second and fourth bisections doubtful from the faintness of the Limb.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for S.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						Inch.	"			
Nov. 25	(a) ☉ N.L.....	1. 12,6	12,5	9,7	11,3	10,5	10,8	+11,0	9,875		184. 46. 14,28	29,914	42,8	41,5	188,92	110. 35. 19,77	B.
	☉ S.L.....	3. 33,3	33,2	31,6	32,4	31,2	31,9		9,875		185. 18. 36,18				195,24	111. 7. 47,99	B.
	Zenith Point....	1. 22,1	20,0	17,8	17,5	15,0	18,5		10,361		112. 1. 11,43						B.
Nov. 26	♂ Tauri.....	2. 26,3	26,2	25,2	23,8	25,1	23,3				147. 7. 25,87	29,498	49,0	45,3	40,80	72. 54. 3,24	B.
	(b) S.L.....	2. 55,8	54,4	55,4	51,9	55,3	49,8		10,112	-2	145. 17. 48,26				38,10	71. 4. 22,93	B.
	S.L.....	...	...	...	...	...	...		10,246	-1	145. 17. 47,53				...	71. 4. 22,20	B.
	S.L.....	...	...	...	...	...	...		10,384		145. 17. 46,82				...	71. 4. 21,49	B.
	S.L.....	...	...	...	...	...	...		10,490	+1	145. 17. 46,88				...	71. 4. 21,55	B.
	S.L.....	...	...	...	...	...	...		10,635	+2	145. 17. 46,24				...	71. 4. 20,91	B.
	τ Tauri.....	3. 19,2	16,7	18,0	14,1	16,3	13,2				141. 33. 17,45				32,89	67. 19. 46,91	B.
	ι Tauri.....	0. 57,6	57,8	54,8	53,0	55,9	54,1				142. 50. 55,87				34,65	68. 37. 27,09	B.
	Calliope.....	3. 18,8	16,9	17,7	13,2	15,9	13,8				138. 58. 17,25				29,52	64. 44. 43,34	B.
Nov. 27	(c) ☉ S.L.....	1. 22,8	22,4	19,5	21,9	21,1	20,6		11,253		185. 40. 55,74	29,692	46,8	46,5	196,27	111. 30. 8,58	B.
	☉ N.L.....	3. 59,4	57,3	56,2	56,3	56,6	54,3		11,253		135. 8. 32,00				189,80	110. 57. 38,37	B.
	Neptune.....	1. 5,6	5,6	5,0	3,6	4,4	3,7				173. 21. 5,03	29,770	42,2	45,5	106,73	99. 8. 48,33	B.
	(d) H. C. 46951....	1. 23,6	23,0	22,2	21,1	20,3	21,5				162. 1. 22,45	29,776	44,2	41,4	70,32	87. 48. 29,34	B.
	(e) B. (w.) o. 64....	1. 26,2	25,5	24,3	23,4	23,3	24,2				168. 6. 25,00				87,68	93. 53. 49,25	B.
	H. C. 245.....	0. 61,6	59,5	58,6	56,7	58,3	57,2				166. 40. 59,00				83,16	92. 28. 18,73	B.
	B. (w.) o. 240....	0. 20,9	20,8	19,6	19,3	18,9	18,9				168. 40. 19,85				89,56	94. 27. 45,98	B.
	B.A.C. 274.....	1. 44,6	43,9	42,8	41,8	42,6	41,6				158. 31. 43,50				62,21	84. 18. 42,28	B.
	(f) H. C. 1836....	4. 39,9	38,8	36,5	38,1	35,4	38,3				156. 24. 37,68				57,79	82. 11. 32,04	B.
	(f)(g) B. (w.) o. 1074.	4. 23,6	23,3	20,5	20,0	20,5	22,1				159. 54. 21,43				65,28	85. 41. 23,28	B.
	(f) B. (w.) i. 84....	4. 16,5	17,0	13,3	13,1	12,3	14,7				154. 14. 14,20				53,57	80. 1. 4,34	B.
	(h) Hygeia.....	2. 28,7	26,2	28,4	23,1	24,5	28,0				139. 7. 27,38	29,745	42,8	40,4	30,27	64. 53. 54,22	B.
	τ Tauri.....	3. 17,8	15,6	15,8	13,5	14,0	15,4				141. 33. 16,55				33,51	67. 19. 46,63	B.
	ι Tauri.....	0. 59,8	58,1	56,6	55,1	55,3	56,1				142. 50. 57,18				35,29	68. 37. 29,04	B.
	N.L.....	0. 41,6	39,1	40,3	36,3	38,6	38,1		10,322	-2	142. 10. 29,68				34,36	67. 57. 0,61	B.
	N.L.....	...	...	...	...	...	...		10,396	-1	142. 10. 29,49					67. 57. 0,42	B.
	N.L.....	...	...	...	...	...	...		10,504		142. 10. 28,71					67. 56. 59,64	B.
	N.L.....	...	...	...	...	...	...		10,603	+1	142. 10. 28,26					67. 56. 59,19	B.
	N.L.....	...	...	...	...	...	...		10,689	+2	142. 10. 28,19					67. 56. 59,12	B.
Dec. 1	(i) ☉ N.L.....	3. 23,1	21,1	21,4	20,8	19,4	20,7	+10,8	10,428		185. 48. 13,35	29,840	39,8	40,0	201,50	111. 37. 31,47	B.
Dec. 2	(k) ☉ S.L.....	4. 19,2	16,9	17,8	16,3	15,4	14,9		9,369		186. 29. 31,46	29,783	43,5	45,0	208,05	112. 18. 56,13	B.
	☉ N.L.....	1. 58,5	57,2	55,7	55,7	56,0	54,0		9,369		185. 57. 10,04				200,91	111. 46. 27,57	B.
Dec. 6	(l) ☉ N.L.....	3. 18,3	17,1	16,0	19,1	16,7	14,2		9,339	+2½	186. 28. 31,27	29,732	50,3	51,4	204,72	112. 17. 52,61	B.
	☉ S.L.....	0. 42,2	44,1	38,6	40,4	42,5	39,3		9,339	+2½	187. 0. 54,60				212,21	112. 50. 23,43	B.
	Zenith Point....	2. 13,4	10,6	9,7	8,0	6,5	7,8		12,816		112. 1. 11,38						B.
Dec. 8	Neptune.....	3. 61,2	58,0	62,6	57,5	58,4	56,2				173. 19. 0,42	29,191	45,8	42,6	105,14	99. 6. 42,18	B.
Dec. 11	(m) Neptune.....	3. 11,3	9,4	10,4	7,3	8,7	7,0	+6,7			173. 18. 9,72	29,593	51,5	50,6	104,78	99. 5. 52,01	B.
	(n) B. (w.) II. 424...	1. 44,9	44,6	45,1	42,5	44,7	43,1				152. 1. 44,53	29,580	50,8	49,6	48,41	77. 48. 30,45	B.
	Calliope.....	3. 21,8	19,3	21,5	16,6	18,5	16,6				137. 58. 19,78	29,577	5,5	4,3	28,10	63. 44. 45,39	B.
Dec. 14	(o) ☉ S.L.....	2. 31,4	28,4	29,3	27,3	27,8	26,7		10,500	-2	187. 42. 18,42	29,322	51,8	53,3	218,65	113. 31. 54,58	B.
	☉ N.L.....	0. 3,9	4,4	1,8	3,0	2,1	1,9		10,500	+2½	187. 9. 51,94				210,60	112. 59. 20,05	B.
	(f) α Andromedæ R.	4. 47,4	46,8	43,2	45,0	43,4	45,9		7,794		268. 5. 31,23	29,299	49,5	46,3	25,54	61. 43. 12,80	B.
	α Andromedæ...	1. 6,4	3,6	3,3	0,0	2,3	1,3		7,794	+2	135. 56. 49,37					61. 43. 12,42	B.
	(f)(p) Hygeia.....	4. 35,1	33,1	32,9	30,2	32,2	30,5		9,783		139. 54. 36,74	29,294	48,0	45,6	30,50	65. 41. 4,75	B.
	(q) Calliope.....	3. 7,4	5,6	8,8	2,5	4,6	2,1		9,783		137. 48. 10,39				27,84	63. 34. 35,74	B.
	α Orionis.....	0. 35,5	34,0	32,7	31,6	32,5	31,3				156. 50. 33,05	29,244		44,0	57,31	82. 37. 27,87	B.
Dec. 15	☉ N.L.....	3. 40,4	38,7	39,9	37,9	38,0	37,0		11,689		187. 13. 4,25	28,951	52,0	52,1	209,23	113. 2. 30,99	B.
	☉ S.L.....	1. 4,1	4,9	1,3	1,7	1,4	0,7		11,689		187. 45. 27,36				217,23	113. 35. 2,10	B.

ONE REVOLUTION of the MICROMETER = 20",852. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Steady, but not sharply defined. (b) The Limb was steady and fully illumined, but very rugged. The top of a mountain was bisected. (c) Limbs ragged. (d) 'The last of three.' (e) 'A faint companion.' (f) Negative correction for Runs. (g) The pointer reading has been increased 10'. See Dec. 20. (h) Bright. (i) Faint but steady: S.L. hid. (k) This Limb faint. (l) Unsteady. (m) Faint from cloud. (n) The Pointer Reading has been diminished 1". (o) Difficult and uncertain observation from cloud. (p) Very faint: mist on the eye-piece. (q) Bright and easily observed.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.						
		A	B	C	D	E	F						Int.	Ext.		"	o	"		o	o	"	o	"	"
Dec. 15	Lutetia .....	3.35,0	32,6	35,9	31,0	31,6	31,3	+6,7	9,890		151.48.35,97	29,040	47,5	45,0	47,61	77.35.21,09		B.							
	H. C. 6525.....	2.21,1	18,9	20,0	17,5	16,6	17,8				148.7.19,17	29,072	46,7	44,6	41,78	73.53.58,46		B.							
	9 Tauri.....	0.15,6	15,1	12,8	12,1	11,5	12,8				141.30.13,37				32,40	67.16.43,28		B.							
	(a) B. (w.) III. 569. .	3.36,8	34,0	37,8	32,3	32,8	32,2			+2½	150.48.35,12				46,04	76.35.18,67		B.							
	H. C. 6839.....	2.44,5	41,4	43,6	41,0	40,2	40,5				141.2.42,87				31,80	66.49.12,18		B.							
	(b) Hygeia.....	0.52,9	50,0	51,2	46,6	49,2	47,2				139.57.49,70			44,0	30,44	65.44.17,65		B.							
	(c)(d) Calliope .....	4.61,9	60,9	61,2	58,2	60,1	57,6				137.44.59,98			43,6	27,67	63.31.25,16		B.							
Dec. 16	☉ S.L.....	2.38,8	37,2	37,4	36,3	35,3	35,0		8,740		187.48.3,52	29,376	47,3	45,9	223,96	113.37.44,99		B.							
	☉ N.L.....	0.10,8	11,6	10,1	11,5	8,7	10,0		8,740		187.15.36,77				215,67	113.5.9,95		B.							
	Zenith Point....	2.9,8	7,6	6,5	4,3	4,2	4,6		12,694		112.1.10,49							B.							
Dec. 17	☉ N.L.....	2.42,9	42,4	43,0	42,2	42,3	40,2		9,639		187.17.50,30	29,088	49,2	50,8	211,93	113.7.19,74		B.							
	☉ S.L.....	0.4,4	7,9	4,8	6,1	4,6	4,4		9,639		187.50.12,91				220,07	113.39.50,49		B.							
	(d)(e) S.L.....	4.54,5	55,2	55,0	54,9	56,9	54,1		9,076	-2	174.25.7,50	29,092	48,6	46,8	108,75	100.12.53,76		B.							
	» S.L.....	...	...	...	...	...	...		9,356	-1	174.25.5,11					100.12.51,37		B.							
	» S.L.....	...	...	...	...	...	...		9,521		174.25.5,07					100.12.51,33		B.							
	» S.L.....	...	...	...	...	...	...		9,689	+1	174.25.4,91					100.12.51,17		B.							
	» S.L.....	...	...	...	...	...	...		9,852	+2	174.25.4,82					100.12.51,08		B.							
	27 Piscium.....	5.2,9	2,5	1,4	1,3	2,0	0,3				168.35.1,73				86,25	94.22.25,49		B.							
	β Ceti.....	4.8,4	10,7	8,8	7,9	8,4	8,7				182.59.9,75				163,91	108.47.51,17		B.							
	(f) Hygeia .....	3.37,3	32,4	37,2	31,2	32,0	30,5				140.3.34,23	29,228	46,4	42,8	30,80	65.50.2,54		B.							
Dec. 18	☉ N.L.....	0.20,6	20,9	19,5	19,8	18,0	18,5	+10,5	12,831		187.19.20,62	30,129	45,2	41,3	224,29	113.9.1,97		B.							
	☉ S.L.....	2.46,3	45,0	45,5	43,1	43,1	40,6		12,831		187.51.45,87				232,94	113.41.35,88		B.							
	α Aquilæ R.....	3.29,9	26,9	27,3	24,9	24,6	26,2		10,537	-2	248.18.16,54	30,170		39,3	57,44	81.30.59,84		B.							
	α Aquilæ.....	4.16,5	16,5	19,8	15,4	15,4	13,4		10,537		155.44.6,47					81.31.0,97		B.							
	Neptune.....	0.40,2	41,3	40,5	38,4	38,0	39,4				173.15.39,85	30,231	44,4	36,4	110,04	99.3.26,95		B.							
	27 Piscium.....	5.2,8	2,5	2,4	0,6	1,2	0,4				168.35.1,65				91,58	94.22.30,29		B.							
Dec. 20	(d) Neptune.....	4.58,2	57,1	55,7	54,7	56,5	55,2		10,016		173.14.55,89	29,761	49,4	50,5	105,16	99.2.38,11		B.							
	Zenith Point....	1.45,5	43,1	41,9	39,3	40,0	40,3		11,503		112.1.10,94							B.							
	B. (w.) o. 858 ..	3.35,1	32,9	36,8	31,3	34,0	31,5				164.33.34,85	29,828	49,5	48,4	76,00	90.20.47,91		B.							
	B. (w.) o. 942....	2.32,2	31,0	31,7	28,6	30,3	29,6				159.52.31,43				64,38	85.39.32,87		B.							
	B. (w.) o. 1013 ..	0.31,8	31,0	29,6	28,5	28,9	28,6				156.40.29,97				57,59	82.27.24,62		B.							
	(d) B. (w.) o. 1074 .	4.18,8	22,0	19,3	18,9	20,0	20,4				159.54.19,67				64,45	85.41.21,18		B.							
	B. (w.) i. 46.....	0.25,4	25,9	24,5	22,6	22,9	22,9				156.25.24,17				57,08	82.12.18,31		B.							
	B. (w.) i. 57.....	...	...	...	...	...	...		2,332		156.28.4,06				57,17	82.14.58,29		B.							
	B. (w.) i. 133....	1.12,0	12,1	10,4	8,2	10,1	10,5				155.6.10,97				54,52	80.53.2,55		B.							
	B. (w.) i. 205 ...	3.38,4	36,8	38,8	35,1	36,5	33,9				155.18.37,83				54,91	81.5.29,80		B.							
	B. (w.) i. 216....	...	...	...	...	...	...		14,320		155.17.7,75				54,87	81.3.59,68		B.							
	(d) μ Piscium .....	4.62,2	58,7	63,9	58,9	59,4	56,4				158.49.59,92	29,842	48,8	47,5	62,23	84.36.59,21		B.							
	(d) π Piscium.....	4.57,8	58,2	57,2	56,3	57,5	56,0				152.49.57,15				50,46	78.36.44,67		B.							
	ν Piscium .....	3.32,6	32,0	34,5	30,2	31,8	29,6				159.28.33,03				63,64	85.15.33,73		B.							
	» S.L.....	3.38,8	37,0	39,9	35,9	36,3	35,3		9,911	-2	159.23.33,69				63,46	85.10.34,21		B.							
	» S.L.....	...	...	...	...	...	...		10,046	-1	159.23.34,16					85.10.34,68		B.							
	» S.L.....	...	...	...	...	...	...		10,214		159.23.33,99					85.10.34,51		B.							
	» S.L.....	...	...	...	...	...	...		10,386	+1	159.23.33,75					85.10.34,27		B.							
	» S.L.....	...	...	...	...	...	...		10,584	+2	159.23.33,01					85.10.33,53		B.							
	(h) Lutetia .....	0.50,4	49,0	48,9	46,5	48,0	46,8				151.40.48,55	29,858	48,5	47,5	48,47	77.27.34,08		B.							
	Thalia .....	0.7,5	7,9	5,4	3,9	5,4	4,6		9,909		147.5.7,72				41,05	72.51.45,83		B.							
	Hygeia .....	2.25,3	21,6	22,9	19,0	20,3	19,3		9,909		140.12.24,10	29,884	48,2	47,2	31,40	65.58.52,56		B.							
	Calliope .....	4.35,6	32,3	36,5	30,4	32,0	30,3		9,909		137.29.36,32				27,91	63.16.1,29		B.							
Dec. 21	(i) ☉ N.L.....	1.7,4	6,6	6,0	5,8	5,7	5,6		8,193	-1	187.21.44,18	29,978	48,3	48,2	220,56	113.11.21,80		B.							
	☉ S.L.....	3.30,7	29,6	31,0	27,7	29,0	27,1		8,193	+4	187.54.7,03				229,07	113.43.53,16		B.							
	(k) Hygeia.....	0.10,9	10,3	9,3	7,4	7,6	6,5		9,953		140.15.9,70	29,893	46,4	41,8	31,82	66.1.38,58		B.							
	(k) Calliope .....	1.33,0	31,1	31,6	27,7	29,9	28,0		9,953		137.26.31,71				28,17	63.12.56,94		B.							

ONE REVOLUTION of the MICROMETER = 20".852. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.  
 ASSUMED CO-LATITUDE = 37°.47'.8".00.

(a) 'Appeared oblong.' (b) A following object was also bisected: micrometer reading, 137.526. (c) Bright and easily observed. (d) Negative correction for Runs. (e) Clouded and faint at the first bisection. (f) Faint. (g) The Barometer and Thermometer not being read are interpolated from those for the Sun and Neptune, two-fifths of the differences being applied to the readings for the Sun. (h) 'A brighter north-following.' (i) Very faint: without the dark glass. The bisection of S.L. not satisfactory. (k) Both observations uncertain on account of Moon-light: Hygeia was almost invisible.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		o' ' "	Inch.	o	o	"	o' ' "	
Dec. 23	(a) ☉ S.L.....	2. 18,5	16,2	16,6	17,0	14,1	14,6	+10,5	7,089		187. 53. 17,65	29,737	44,9	41,1	230,44	113. 43. 5,15	B.
	(b) ☉ N.L.....	4. 52,6	53,4	50,0	52,4	50,5	51,1		7,089		187. 20. 52,32				221,87	113. 10. 31,25	B.
	(c) ☉ S.L.....	1. 5,4	4,1	4,8	1,9	2,3	1,6		11,619	-2	146. 30. 25,29	29,751	42,4	37,0	40,91	72. 17. 3,26	B.
	☉ S.L.....	...	...	...	...	...	...		11,689	-1	146. 30. 26,11					72. 17. 4,08	B.
	☉ S.L.....	...	...	...	...	...	...		11,767		146. 30. 26,87					72. 17. 4,84	B.
	☉ S.L.....	...	...	...	...	...	...		11,844	+1	146. 30. 27,76					72. 17. 5,73	B.
	☉ S.L.....	...	...	...	...	...	...		11,999	+2	146. 30. 27,11					72. 17. 5,08	B.
Dec. 27	☉ S.L.....	3. 25,0	21,9	24,0	18,9	20,6	18,1	+10,3	11,096	-2	141. 23. 1,84	29,339		45,6	32,47	67. 9. 31,59	B.
	☉ S.L.....	...	...	...	...	...	...		10,949	-1	141. 23. 3,78					67. 9. 33,53	B.
	☉ S.L.....	...	...	...	...	...	...		10,856		141. 23. 4,72					67. 9. 34,47	B.
Dec. 28	(d) ☉ N.L.....	1. 34,9	33,9	32,6	32,6	31,2	32,2		12,566		187. 10. 39,92	29,514	45,2	43,0	216,79	113. 0. 13,99	B.
	☉ S.L.....	3. 59,8	57,9	58,6	55,9	55,6	54,8		12,566		187. 43. 4,94				225,07	113. 32. 47,29	B.
	Hygeia.....	4. 57,6	52,2	59,2	51,2	53,5	50,1		10,047	+3	140. 34. 54,48	29,691	41,5	36,8	32,38	66. 21. 24,14	B.
	Calliope.....	2. 54,2	51,5	54,7	48,6	51,4	48,3		10,047		137. 7. 51,45				27,88	62. 54. 16,61	B.
Dec. 30	☉ S.L.....	0. 46,8	50,0	45,3	46,9	46,2	45,3		10,048		187. 35. 46,02	29,792	49,7	51,5	221,26	113. 25. 24,56	B.
	Hygeia.....	0. 11,3	9,6	8,7	6,4	6,9	8,3		10,048	+3	140. 40. 8,07	29,943	46,3	43,5	32,32	66. 26. 37,67	B.
	H. C. 11839.....	1. 48,1	46,6	47,6	44,6	46,3	44,9				146. 16. 46,95	29,974	45,6	43,6	40,31	72. 3. 24,54	B.
	H. C. 12158.....	4. 19,8	16,5	20,2	15,2	14,7	14,6				141. 4. 18,30				32,88	66. 50. 48,46	B.
	H. C. 12396.....	0. 25,2	25,7	25,3	22,9	22,8	24,6				146. 30. 24,55				40,66	72. 17. 2,49	B.
	H. C. 12483.....	2. 27,6	25,0	26,3	20,9	23,4	22,3				136. 2. 25,07				26,38	61. 48. 48,73	B.
	H. C. 12496.....	...	...	...	...	...	...		10,359		136. 2. 17,58				26,38	61. 48. 41,24	B.
	H. C. 12700.....	3. 59,0	55,9	59,9	53,2	55,5	53,2				139. 33. 57,47				30,88	65. 20. 25,63	B.
Dec. 31	☉ S.L.....	1. 15,4	14,9	13,6	14,0	12,3	12,6		9,731		187. 31. 19,84	30,050	45,9	45,6	224,78	113. 21. 1,90	B.
	☉ N.L.....	3. 49,2	46,5	48,4	46,0	47,2	45,4		9,731		186. 58. 54,03				216,60	112. 48. 27,91	B.
	(e) B. (w.) o. 775...	2. 26,2	25,6	25,5	22,2	23,0	21,7				160. 57. 24,85	30,016	46,7	45,4	67,71	86. 44. 29,84	B.
	B. (w.) o. 858...	3. 33,0	32,2	35,0	29,9	31,3	30,4				164. 33. 33,18				76,95	90. 20. 47,41	B.
	B. (w.) o. 942...	2. 29,7	29,2	29,5	26,3	27,4	27,2				159. 52. 29,07				65,19	85. 39. 31,54	B.
	B. (w.) o. 996...	3. 20,4	19,1	22,8	17,3	18,6	18,0				164. 23. 20,50				76,48	90. 10. 34,26	B.
	(f) B. (w.) o. 1088...	3. 21,8	20,1	22,3	17,9	19,2	18,8				159. 58. 21,17				65,41	85. 45. 23,86	B.
	B. (w.) II. 650...	2. 5,8	4,0	5,2	2,2	2,9	3,1				154. 2. 4,57	30,011	46,3	44,6	53,25	79. 48. 55,10	B.
	ρ <sup>3</sup> Arietis.....	2. 23,3	21,2	22,6	19,1	19,4	18,9				146. 47. 21,55				41,05	72. 33. 59,88	B.
	(g) B. (w.) II. 905...	3. 19,0	17,1	19,8	14,6	15,5	15,8				154. 18. 18,10				53,76	80. 5. 9,14	B.
	Zenith Point....	2. 6,5	3,9	2,7	0,9	0,1	1,2		12,519		112. 1. 10,72						B.

ONE REVOLUTION of the MICROMETER = 20'',852. ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8'',00.

(a) Unusual motion. (b) Negative correction for Runs. (c) Through dense cloud. (d) Through fog and cloud; no definition. (e) 'A fainter south-preceding.' (f) Faint. (g) 'No star higher in the field.'







MEAN NORTH POLAR DISTANCES, JAN. 1, 1852,

OF THE STARS

OBSERVED IN THE YEAR 1852,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND THE

CONCLUDED MEAN NORTH POLAR DISTANCES,

JANUARY 1, 1852;

WITH THE ANNUAL VARIATIONS.

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
1	$\alpha$ Andromedæ.....	Dec. 14		+ 22,41	34,83	0. 0. 45	1	61. 43. 36,64	- 20,05	
2	$\alpha$ Andromedæ R...	14		+ 22,41	35,21		1	61. 43. 34,16		
3	B. (w.) o. 64.....	Nov. 27	7.8	+ 12,97	2,22	0. 3. 59	1	93. 54. 3,26	20,05	
4	H. C. 245.....	27	9	+ 13,44	32,17	0. 9. 31	1	92. 28. 33,17	20,04	
5	B. (w.) o. 240.....	27	8.9	+ 12,79	58,77	0. 13. 53	1	94. 27. 59,82	20,02	
6	$\beta$ Ceti.....	Dec. 17		+ 6,26	57,43	0. 36. 9	1	108. 47. 59,31	19,81	
7	B. (w.) o. 775.....	31	8	+ 12,77	42,61	0. 44. 18	1	86. 44. 43,60	19,68	
8	B. (w.) o. 858.....	20	8	+ 12,20	60,11					
9		31	8.9	+ 11,42	58,83	0. 49. 25	2	90. 21. 0,44	19,59	
10	B.A.C. 274.....	Nov. 27	6	+ 15,52	57,80	0. 52. 10	1	84. 18. 58,85	19,54	
11	B. (w.) o. 942....	Dec. 20	9	+ 13,75	46,62					
12		31	8.9	+ 13,01	44,55	0. 53. 55	2	85. 39. 46,60	19,50	
13	H. C. 1836.....	Nov. 27	7.8	+ 16,05	48,09	0. 55. 42	1	82. 11. 49,21	19,47	
14	B. (w.) o. 996.....	Dec. 31	8	+ 11,38	45,64	0. 56. 43	1	90. 10. 46,61	19,45	
15	B. (w.) o. 1013....	20	8½	+ 14,79	39,41	0. 57. 42	1	82. 27. 40,52	19,42	
16	B. (w.) o. 1074....	Nov. 27	8.9	+ 14,99	38,27					
17		Dec. 20	9	+ 13,63	34,81	1. 0. 30	2	85. 41. 37,55	19,36	
18	B. (w.) o. 1088....	31	9	+ 12,89	36,75	1. 1. 23	1	85. 45. 37,76	19,34	
19	B. (w.) I. 46.....	20		+ 14,75	33,06	1. 3. 59	1	82. 12. 34,18	19,28	
20	B. (w.) I. 57.....	20		+ 14,72	13,01	1. 4. 37	1	82. 15. 14,13	19,26	
21	Polaris.....	Apr. 25		- 8,82	45,75					
22	—	25		- 8,82	46,04					
23	—	25		- 8,82	45,39					
24	—	25		- 8,82	44,99					
25	—	May 5		- 11,32	47,02					
26	—	5		- 11,32	46,67					
27	—	14		- 13,42	46,44	1. 5. 36	12	1. 28. 46,40	19,24	
28	—	14		- 13,42	47,54					
29	—	14		- 13,42	46,70					
30	—	Sept. 29		+ 4,98	46,36					
31	—	29		+ 4,98	45,63					
32	—	29		+ 4,98	45,62					
33	Polaris R.....	29		+ 4,98	44,92					
34	—	29		+ 4,98	45,30		3	1. 28. 45,89		
35	—	29		+ 4,98	45,93					
36	Polaris SP.....	May 15		- 13,52	46,78					
37	—	15		- 13,52	46,58					
38	—	Sept. 24		+ 2,93	48,74					
39	—	24		+ 2,93	48,63					
40	—	24		+ 2,93	48,15					
41	—	Oct. 1		+ 5,58	47,84					
42	—	1		+ 5,58	47,44		13	1. 28. 47,35		
43	—	1		+ 5,58	46,36					
44	—	2		+ 5,98	47,79					
45	—	2		+ 5,98	47,40					
46	—	18		+ 12,48	48,66					
47	—	18		+ 12,48	48,48					
48	—	18		+ 12,48	47,58					
49	Polaris SP. R.....	May 15		- 13,52	46,09					
50	—	15		- 13,52	45,00					
51	—	Sept. 24		+ 2,93	47,59					
52	—	24		+ 2,93	48,09					
53	—	24		+ 2,93	47,38					
54	—	Oct. 1		+ 5,58	48,66					
55	—	1		+ 5,58	49,13		13	1. 28. 47,34		
56	—	1		+ 5,58	48,71					
57	—	2		+ 5,98	48,85					
58	—	2		+ 5,98	48,87					
59	—	18		+ 12,48	46,57					
60	—	18		+ 12,48	46,93					
61	—	18		+ 12,48	48,22					
62	B. (w.) I. 84.....	Nov. 27		+ 16,38	20,72	1. 6. 23	1	80. 1. 21,92	19,22	
63	B. (w.) I. 133.....	Dec. 20	10	+ 15,10	17,65	1. 9. 14	1	80. 53. 18,82	19,15	
64	B. (w.) I. 205.....	20	9.10	+ 14,93	44,73	1. 13. 22	1	81. 5. 45,89	19,04	
65	B. (w.) I. 246.....	20	8	+ 14,93	14,61	1. 13. 58	1	81. 4. 15,77	19,02	
66	$\mu$ Piscium.....	20		+ 13,55	12,76	1. 22. 26	1	84. 37. 13,80	18,77	
67	$\pi$ Piscium.....	20	7	+ 16,00	0,67	1. 29. 16	1	78. 37. 1,94	18,55	
68	$\nu$ Piscium.....	Sept. 29		+ 14,97	46,36					
69	—	Dec. 20		+ 13,05	46,78	1. 33. 44	2	85. 15. 47,58	- 18,40	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
70	B. (w.) II. 424.....	Dec. 11		+ 13.79	44.24	2.25.19	1	77.48.45.54	- 16.15	
71	θ Persei.....	Nov. 17		+ 15.97	3.89	2.34.7	1	41.24.4.44	15.69	
72	θ Persei R.....	17		+ 15.97	2.01		1	41.24.2.21		
73	B. (w.) II. 650.....	Dec. 31	9	+ 11.88	6.98	2.37.34	1	79.49.8.19	15.50	
74	ρ <sup>3</sup> Arietis.....	31	6.7	+ 4.65	4.53	2.48.5	1	72.34.6.11	14.89	
75	B. (w.) II. 905.....	31	8	+ 11.16	20.30	2.51.50	1	80.5.21.50	14.68	
76	δ Arietis.....	Jan. 30		- 3.57	9.09	3.3.10	1	70.50.10.77	13.98	
77	ξ Tauri.....	30		- 6.99	11.18	3.19.9	1	80.47.12.35	12.95	
78	H. C. 6525.....	Dec. 15	8	+ 11.34	9.80	3.24.38	1	73.54.11.31	12.57	
79	9 Tauri.....	15	7.8	+ 12.28	55.56	3.28.16	1	67.16.57.32	12.32	
80	B. (w.) III. 569.....	15	7.8	+ 10.46	29.13	3.31.4	1	76.35.30.51	12.14	
81	H. C. 6839.....	15	9	+ 11.88	24.06	3.34.56	1	66.49.25.83	11.86	
82	η Tauri.....	Feb. 6		- 2.09	18.49	3.38.42	1	66.21.20.27	11.60	
83	η Tauri R.....	6		- 2.09	23.13		1	66.21.22.08		
84	ζ Persei.....	6		+ 0.59	32.47	3.44.50	1	58.33.34.24	11.15	
85	ζ Persei R.....	6		+ 0.59	36.38		1	58.33.35.36		
86	A <sup>1</sup> Tauri.....	6	6	- 2.75	32.46	3.55.57	2	68.19.35.12	10.33	
87	—	11	5.6	- 2.86	34.29					
88	H. C. 7661.....	6	8.9	- 2.11	32.26	4.0.0	2	66.31.34.37	10.03	
89	—	11	8	- 2.20	32.91					
90	γ Tauri.....	Jan. 30		- 4.72	1.15					
91	—	Feb. 6		- 4.90	0.62	4.11.23	3	74.44.2.60	9.16	
92	—	11		- 5.02	1.62					
93	γ Tauri R.....	6		- 4.90	2.51		2	74.44.1.05		
94	—	11		- 5.02	1.04					
95	δ <sup>2</sup> Tauri.....	Jan. 30		- 4.11	10.20	4.15.34	2	72.54.12.36	8.83	
96	—	Nov. 26		+ 8.16	11.40					
97	B.A.C. 1373.....	Feb. 11	7	- 2.89	51.39	4.19.14	1	68.42.53.12	8.54	
98	ε Tauri.....	3		- 3.61	4.69	4.19.59	2	71.9.7.01	8.47	
99	—	6		- 3.65	5.98					
100	ε Tauri R.....	3		- 3.61	7.89		2	71.9.6.94		
101	—	6		- 3.65	7.76					
102	Aldebaran.....	11		- 4.62	32.47	4.27.26	1	73.47.33.99	7.88	
103	Aldebaran R.....	11		- 4.62	33.00		1	73.47.32.24		
104	τ Tauri.....	Nov. 26		+ 6.75	53.66	4.33.22	2	67.19.55.29	7.40	
105	—	27		+ 6.77	53.40					
106	*.....	17		+ 4.92	39.99	4.49.11	2	64.8.41.87	6.10	
107	—	18		+ 4.98	40.12					
108	*.....	17		+ 4.80	37.65	4.50.31	2	63.58.39.13	5.99	
109	—	18		+ 4.84	36.99					
110	ι Tauri.....	26		+ 5.17	32.26	4.54.15	2	68.37.34.98	5.67	
111	—	27		+ 5.19	34.23					
112	Rigel.....	Feb. 11		- 11.96	34.61	5.7.26	1	98.22.35.91	4.55	
113	Rigel R.....	11		- 11.96	35.44		1	98.22.34.86		
114	H. C. 10056.....	Nov. 19		+ 3.07	58.95	5.14.56	1	65.11.0.75	3.91	
115	H. C. 10345.....	Feb. 10	8	- 1.07	52.44	5.23.12	1	63.7.54.26	3.21	
116	H. C. 10633.....	Mar. 4	8 <sup>1</sup> / <sub>4</sub>	- 0.37	53.35	5.31.22	1	62.17.55.16	2.50	
117	H. C. 10882.....	4	9	- 0.96	0.82	5.38.7	1	64.6.2.63	1.91	
118	*.....	4	9.10	- 0.96	4.04	5.38.29	1	64.5.5.85	1.88	
119	H. C. 11036.....	Feb. 10	9 <sup>1</sup> / <sub>4</sub>	- 1.66	0.70	5.41.55	1	64.49.2.50	1.57	
120	α Orionis.....	Dec. 14		+ 1.25	29.12	5.47.10	1	82.37.30.23	1.12	
121	H. C. 11251.....	Feb. 10	8.9	- 2.78	25.82	5.49.36	1	68.31.27.55	0.90	
122	χ <sup>3</sup> Orionis.....	10	6	- 3.29	38.05	5.54.42	1	70.18.39.74	0.47	
123	*.....	10		- 4.12	0.77	5.58.43		73.13.12.32	0.12	
124	H. C. 11584.....	10		- 4.12	7.18	5.58.43	1	73.16.8.72	- 0.12	
125	H. C. 11839.....	Dec. 30	7	+ 1.61	26.15	6.5.50	1	72.3.27.75	+ 0.51	
126	H. C. 12102.....	Jan. 30	9	- 1.93	7.68	6.13.11	1	63.11.9.50	1.15	
127	H. C. 12158.....	Dec. 30	7.8	- 1.49	46.97	6.14.33	1	66.50.48.74	1.27	
128	H. C. 12339.....	Jan. 30	8 <sup>1</sup> / <sub>4</sub>	- 1.95	29.04	6.19.40	1	62.56.30.86	1.72	
129	H. C. 12396.....	Dec. 30	8	- 2.27	0.22	6.21.12	1	72.17.1.81	1.85	
130	H. C. 12454.....	Jan. 30	9	- 3.95	58.81	6.22.47	1	72.29.0.39	1.99	
131	H. C. 12483.....	Dec. 30	8.9	- 2.22	46.51	6.23.46	1	61.48.48.32	2.08	
132	H. C. 12496.....	30	8.9	- 2.24	39.00	6.23.59	1	61.48.40.81	2.10	
133	51 (Hev.) Cephei sp.	Aug. 5		- 12.22	43.90	6.29.35	2	2.44.44.25	2.59	
134	—	6		- 12.46	45.54					
135	51 (Hev.) Cephei sp. R.	5		- 12.22	43.25		2	2.44.43.92		
136	—	6		- 12.46	45.17					
137	H. C. 12700.....	Dec. 30	9.10	- 2.91	22.72	6.29.55	1	65.20.24.52	+ 2.62	
138	Sirius.....	Jan. 29		- 9.31	58.07					

No. 123. The R.A. was deduced from a transit observation, Feb. 21, 1859.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		" ' "	"	
139	Sirius .....	Feb. 11		- 9.40	59.33	6. 38. 38	4	106. 30. 59.51	+ 3.37	
140	—	Mar. 13		- 14.13	56.21					
141	—	July 27		+ 4.13	57.12					
142	Sirius R. ....	Feb. 11		- 9.40	63.60					
143	—	Mar. 13		- 14.13	59.65		3	106. 30. 59.37		
144	—	July 27		+ 4.13	58.11					
145	H. C. 13194. ....	Jan. 29	8.9	- 2.49	43.11	6. 43. 46	1	64. 3. 44.92	3.81	
146	H. C. 13233. ....	Mar. 6	8.9	- 2.10	15.69	6. 44. 34	1	68. 6. 17.44	3.87	
147	*. ....	2	8	- 4.09	4.22	6. 44. 49	1	74. 0. 5.73	3.90	No. 147. This star was identified with Bessel z. 276, 6h. 43m. 11s.
148	H. C. 13259. ....	8	8.9	- 0.43	26.04	6. 45. 16	1	63. 17. 27.86	3.94	
149	H. C. 13422. ....	Jan. 29	9	- 3.35	55.25					
150	—	Mar. 2	9	- 2.42	54.47	6. 49. 18	3	68. 41. 54.81	4.28	
151	—	6	9	- 2.29	49.52					
152	B.A.C. 2280. ....	8	8½	- 3.89	36.13	6. 51. 21	1	73. 51. 37.65	4.45	
153	H. C. 13527. ....	6	8.9	- 2.99	44.74	6. 52. 13	1	70. 52. 46.42	4.52	
154	H. C. 13531. ....	6	8.9	- 2.99	4.86	6. 52. 19	1	70. 55. 6.54	4.54	
155	ζ Geminorum. ....	Mar. 13		- 2.23	59.46	6. 55. 20	1	69. 13. 1.17	4.79	
156	ζ Geminorum R. ....	13		- 2.23	1.78		1	69. 13. 0.82		
157	H. C. 13681. ....	8	8¾	+ 0.09	19.77					
158	—	10	8	+ 0.20	20.19	6. 56. 53	3	61. 35. 21.85	4.92	
159	—	16	8	+ 0.49	20.17					
160	H. C. 13700. ....	16	8¾	+ 0.49	49.57	6. 57. 27	1	61. 33. 51.38	4.98	
161	B.A.C. 2326. ....	2		+ 13.70	16.29	6. 59. 39	1	7. 19. 16.26	5.16	
162	B.A.C. 2326 R. ....	2		+ 13.70	10.97		1	7. 19. 11.74		
163	H. C. 13792. ....	6	8	- 0.81	56.91	7. 0. 0	2	64. 1. 58.66	5.19	Nos. 163—166. The two stars are B. z. 341, 6h. 58m. 26s and 6h. 58m. 36s. According to Bessel and H. C. the preceding and brighter star has the less N.P.D.
164	—	13	8	- 0.49	56.78					
165	H. C. 13797. ....	6	8½	- 0.81	54.30	7. 0. 8	2	64. 1. 56.19	5.20	
166	—	13	8.9	- 0.49	54.46					No. 167. The R.A. was deduced from a transit observation on Feb. 14, 1853.
167	*. ....	8	8.9	- 2.86	49.26	7. 0. 21		70. 41. 50.94	5.22	
168	H. C. 13818. ....	8	8.9	- 2.87	27.73	7. 0. 32	1	70. 43. 29.41	5.23	
169	H. C. 13889. ....	10	8.9	- 2.41	5.60	7. 2. 38	1	69. 30. 7.30	5.42	
170	H. C. 13931. ....	Jan. 30	9¼	- 2.37	25.11	7. 3. 51	2	61. 58. 27.08	5.51	
171	—	Mar. 16	9	+ 0.35	25.43					
172	51 Geminorum. ....	Feb. 3		- 4.19	37.34	7. 4. 52	2	73. 35. 39.44	5.60	
173	—	Mar. 2		- 3.90	38.48					
174	B.A.C. 2363. ....	6	8	- 1.14	22.59	7. 5. 24	2	65. 2. 25.84	5.64	Nos. 174 and 175. The R.A. is taken from transit observations in 1853, and agrees with that of H. C. 13990, which is the same star. The R.A. of B.A.C. is about 1s less.
175	—	23	7.8	- 0.41	25.48					
176	53 Geminorum. ....	10	7.8	+ 0.07	56.79	7. 6. 42	2	61. 50. 58.76	5.75	
177	—	13	7	+ 0.23	57.10					
178	H. C. 14075. ....	16	8	- 0.74	23.28	7. 7. 47	1	65. 12. 25.08	5.85	
179	B.A.C. 2383. ....	8	7.8	- 0.42	52.66	7. 7. 53	1	63. 2. 54.48	5.85	No. 179. The N.P.D. of H. C. 14080, which is the same star, is 10" less. The star appears to have proper motion.
180	H. C. 14177. ....	Jan. 30	9	- 3.32	35.70					
181	—	Mar. 6	8.9	- 1.98	33.52	7. 10. 33	4	67. 42. 36.41	6.07	
182	—	10	9	- 1.83	34.60					
183	—	13	9	- 1.70	34.79					
184	δ Geminorum. ....	Jan. 30	4	- 3.34	56.75					
185	—	Feb. 3		- 3.23	56.81					
186	—	Mar. 2		- 2.18	57.45	7. 11. 17	5	67. 44. 58.71	6.14	
187	—	10	4	- 1.83	56.84					No. 187. On this day the magnitude of the companion was estimated at 9.10.
188	—	13	3.4	- 1.71	56.91					
189	H. C. 14242. ....	16	8.9	- 0.19	4.73	7. 12. 26	1	63. 34. 6.54	6.24	
190	58 Geminorum. ....	8	7¼	- 1.63	25.35	7. 14. 34	1	66. 46. 27.12	6.41	
191	H. C. 14393. ....	Jan. 30	9	- 3.59	59.74					Nos. 191—195. This is $\Sigma$ 1083. On March 16, Mr Todd estimated the Mag. of H. C. 14394 at 9. His estimations are generally in higher numbers than Mr Breen's.
192	—	Feb. 3	9	- 3.51	60.86	7. 16. 51	4	69. 13. 3.41	6.60	
193	—	Mar. 16	8.9	- 2.09	61.85					
194	—	23	7½	- 1.83	64.36					
195	H. C. 14394. ....	23	8	- 1.83	59.81	7. 16. 51	1	69. 13. 1.52	6.60	
196	H. C. 14421. ....	10	9	- 0.15	32.42	7. 18. 6	1	62. 24. 34.23	6.71	
197	H. C. 14431. ....	10	8¾	- 0.15	34.03	7. 18. 39	1	62. 24. 35.84	6.75	
198	H. C. 14455. ....	13	8.9	- 3.86	24.11	7. 19. 0	1	74. 23. 25.60	6.78	
199	H. C. 14495. ....	8	9	- 1.67	12.06	7. 19. 59	1	66. 53. 13.83	6.86	
200	H. C. 14556. ....	16	9	- 2.30	40.30	7. 21. 41	1	69. 52. 42.00	7.00	
201	H. C. 14597. ....	10	8	- 0.23	48.37	7. 23. 4	2	62. 33. 51.15	7.10	Nos. 201 and 202. The N.P.D. agrees with that of B. z. 351, 7h. 20m. 45s, which is the same star. The N.P.D. of H. C. is 9" less. The south preceding star noticed by the observer on Mar. 10 is B. z. 351, 7h. 20m. 39s, and is not in H. C.
202	—	23	7	+ 0.49	50.29					
203	Castor sp. ....	Aug. 30		- 3.53	31.02	7. 25. 9	1	57. 47. 32.76	7.28	
204	Castor sp. R. ....	30		- 3.53	32.40		1	57. 47. 31.41		
205	Castor nf. ....	Mar. 2		+ 0.59	26.97	7. 25. 9	2	57. 47. 29.69	+ 7.28	
206	—	Aug. 30		- 3.53	28.93					
207	Castor nf. R. ....	Mar. 2		+ 0.59	29.47					
208	—	Aug. 30		- 3.53	30.31		2	57. 47. 28.90		



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
209	68 Geminorum....	Mar. 8	6	- 3,80	32,97					
210	—	20	7	- 3,46	31,61	7.25.10	2	73.51.33,81	+ 7,28	
211	H. C. 14771.....	23	8½	- 1,77	47,48	7.27.25	1	69.10.49,19	7,47	
212	H. C. 14862.....	20	9	- 3,04	44,60	7.29.35	1	72.35.46,18	7,65	
213	B.A.C. 2514.....	2	8.9	- 1,62	43,41					
214	—	10	7.8	- 1,17	44,12	7.30.15	2	65.26.45,57	7,70	
215	Procyon.....	13		- 7,03	55,54					
216	—	16		- 7,03	56,53	7.31.33	2	84.23.57,08	7,80	
217	Procyon R.....	13		- 7,03	57,61					
218	—	16		- 7,03	60,97		2	84.23.59,00		
219	H. C. 14929.....	8	9	- 1,63	8,73	7.32.44	1	66.34.10,51	7,89	
220	*.....	10	9	- 3,08	15,27	7.34.43	1	71.40.16,90	8,05	
221	Pollux.....	Feb. 3		- 2,61	11,32					No. 220. The R.A. is taken from the transit observation on March 13. There is no star in the place of H. C. 14969.
222	—	10		- 2,12	10,33					
223	—	28		- 0,86	12,09					
224	—	Mar. 2		- 0,65	10,82	7.36.15	7	61.37.13,32	8,18	
225	—	20		- 0,61	11,15					
226	—	22		+ 0,73	12,16					
227	—	Aug. 30		- 2,46	12,73					
228	Pollux R.....	Feb. 3		- 2,61	15,09					
229	—	10		- 2,12	16,05					
230	—	Mar. 2		- 0,65	13,76					
231	—	20		- 0,61	12,92		7	61.37.13,37		
232	—	22		+ 0,73	13,83					
233	—	Apr. 1		+ 1,22	14,63					
234	—	Aug. 30		- 2,46	14,74					
235	79 Geminorum....	Feb. 11	8.9	- 3,45	54,08	7.36.28	1	69.19.55,79	8,20	
236	H. C. 15070.....	Mar. 8	8.9	- 1,52	46,38	7.37.17	1	66.5.48,17	8,26	
237	g Geminorum....	16	6	- 2,69	55,46	7.37.33	1	71.7.57,13	8,28	
238	H. C. 15124.....	13	9	- 2,06	13,59	7.39.3	1	68.42.15,32	8,40	
239	82 Geminorum....	10	7	- 1,53	47,10	7.39.42	1	66.29.48,88	8,45	
240	H. C. 15231.....	Feb. 11	8.9	- 2,46	14,00					
241	—	Mar. 2	9	- 1,11	13,44	7.42.10	3	63.16.16,15	8,65	No. 240—242. The N.P.D. by H. C. is 9" less.
242	—	8	9	- 0,71	15,54					
243	H. C. 15281.....	10	9	- 2,64	6,98					
244	—	20	9	- 2,20	8,32	7.43.33	2	70.10.9,34	8,75	
245	φ Geminorum....	Jan. 30		- 3,12	15,78					
246	—	Feb. 3		- 2,90	16,76	7.44.26	3	62.51.17,89	8,83	
247	—	4		- 2,85	15,68					
248	φ Geminorum R...	Jan. 30		- 3,12	19,63					
249	—	Feb. 3		- 2,90	18,74		2	62.51.18,12		
250	H. C. 15325.....	Mar. 13	9	- 0,33	57,77	7.44.41	2	63.3.0,11	8,84	
251	—	Apr. 1	7.8	+ 0,80	58,81					
252	H. C. 15398.....	Feb. 28	8½	- 3,49	32,26	7.46.24	2	71.39.35,33	8,97	
253	—	Mar. 8	8.9	- 3,17	35,13					
254	H. C. 15437.....	20	9	- 0,04	23,53	7.47.47	1	63.30.25,34	9,09	
255	H. C. 15459.....	2	8½	- 2,60	33,94	7.48.24	1	68.38.35,67	9,13	
256	H. C. 15528.....	8	9	- 2,26	1,01	7.50.12	2	68.27.3,32	9,27	
257	—	Apr. 1	8	- 1,06	2,15					
258	B.A.C. 2658.....	Mar. 20	8½	- 2,59	9,36	7.52.9	1	71.21.11,01	9,43	
259	B.A.C. 2683.....	Feb. 28	7.8	- 3,31	33,97					
260	—	Mar. 8	7	- 2,94	34,22	7.56.12	3	70.44.36,14	9,73	
261	—	20	7	- 2,39	35,19					
262	H. C. 15834.....	22	8	- 3,48	23,23	7.58.36	2	74.25.24,87	9,93	
263	—	Apr. 1	8	- 3,10	23,53					
264	12 Cancrī.....	Feb. 28	8	- 4,55	55,08					
265	—	Mar. 8	7½	- 4,36	55,20	8.0.26	3	75.55.56,74	10,06	
266	—	20	8	- 4,02	55,71					
267	H. C. 15939.....	22	7	- 3,67	27,43	8.1.48	1	75.3.28,88	10,17	No. 267. The N.P.D. of H. C. is 15" less.
268	B.A.C. 2748.....	Feb. 28	8	- 4,46	27,63					
269	—	Mar. 8	8	- 4,26	27,11	8.4.5	4	75.33.29,83	10,34	
270	—	20	8.9	- 3,90	29,67					
271	—	Apr. 1	6.7	- 3,45	29,18					
272	H. C. 16110.....	Mar. 22	7	- 3,17	34,56	8.6.35	1	73.28.36,10	10,53	
273	H. C. 16172.....	Feb. 28	9	- 2,84	54,62	8.8.36	2	68.21.58,30	10,68	
274	—	Apr. 1	8½	- 1,00	58,50					
275	H. C. 16194.....	Feb. 28	9½	- 2,84	3,23	8.9.14	2	68.22.5,76	10,71	
276	—	Apr. 1	8	- 1,01	4,81					
277	B. (w.) VIII. 232...	Mar. 20	9½	- 3,99	18,22	8.9.44	1	75.54.19,63	+ 10,75	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
278	H. C. 16258 .....	Mar. 22	7½	- 1,53	0,90	8.10.44	1	68.17.2,64	+ 10,82	No. 280. Bessel's N.P.D. is 30" greater.
279	H. C. 16379 .....	Feb. 28	10	- 4,51	46,70	8.14.14	1	75.47.48,12	11,08	
280	B. (w.) VIII. 415...	Mar. 22	8½	- 3,95	12,35	8.16.6	1	76.1.13,76	11,23	
281	o Ursæ Majoris ....	20		+ 9,51	32,55	8.17.56	1	28.47.32,31	11,36	
282	o Ursæ Majoris R. .	20		+ 9,51	31,03		1	28.47.32,03		
283	H. C. 16624 .....	Feb. 28	9	- 3,96	13,50					
284	—	Mar. 12	9.10	- 3,52	15,97	8.20.27	3	73.11.17,05	11,54	
285	—	22	8½	- 3,08	17,04					
286	B. (w.) VIII. 653...	12	8.9	- 4,26	51,87					
287	—	20	9	- 3,99	54,60	8.25.24	3	75.56.55,36	11,88	
288	—	22	7.8	- 3,92	55,38					
289	δ Hydræ .....	13		- 6,22	57,16	8.29.49	1	83.46.58,23	12,20	
290	δ Hydræ R. ....	13		- 6,22	0,21		1	83.46.59,89		
291	H. C. 16964 .....	12	8	- 1,59	34,86					
292	—	20	8½	- 1,01	35,86	8.30.3	3	65.47.37,30	12,21	
293	—	22	7	- 0,86	35,81					
294	B.A.C. 2931 .....	Apr. 2	7	- 1,37	6,06	8.33.20	1	69.36.7,76	12,44	
295	B. (w.) VIII. 936...	Mar. 20	9	- 3,96	48,46	8.35.41	1	75.50.49,88	12,60	
296	δ Cancr. ....	Feb. 4		- 4,24	15,41					
297	—	5		- 4,25	14,48					
298	—	Mar. 2		- 3,55	17,44	8.36.16	4	71.18.17,56	12,64	
299	—	3		- 3,52	16,27					
300	H. C. 17225 .....	12	8½	- 2,92	55,82	8.37.4	1	70.38.57,50	12,69	
301	ε Hydræ .....	22		- 5,94	28,04	8.38.56	1	83.2.29,13	12,82	
302	ε Hydræ R. ....	22		- 5,94	27,93		1	83.2.27,57		
303	H. C. 17312 .....	Apr. 2	8	- 1,10	36,09	8.39.52	1	68.45.37,82	12,88	
304	B. (w.) VIII. 1072..	Mar. 12	9	- 4,58	5,10	8.41.27	1	77.17.6,43	12,99	
305	B. (w.) VIII. 1134..	Apr. 2	8	- 3,45	25,38	8.43.52	1	76.3.26,79	13,15	
306	B. (w.) VIII. 1210..	Mar. 12	9.10	- 4,28	45,56	8.46.37	1	75.52.46,98	13,33	
307	α Cancr. ....	2		- 4,85	20,27					
308	—	3		- 4,85	19,53	8.50.23	2	77.34.21,21	13,57	
309	α Cancr. R. ....	3		- 4,85	21,33		1	77.34.20,76		
310	H. C. 17801 .....	12	9	- 4,03	21,32	8.53.50	1	74.49.22,78	13,79	
311	B.A.C. 3103 .....	Apr. 13	7	- 1,30	51,39	8.57.58	1	72.17.52,98	14,06	
312	κ Cancr. ....	Mar. 12	6.7	- 4,92	19,44	8.59.44	1	78.44.20,70	14,16	
313	B. (w.) IX. 26 .....	Apr. 12	8	- 2,81	55,01	9.2.14	1	75.44.56,43	14,31	
314	π¹ Cancr. ....	Mar. 12	8	- 3,98	37,16	9.4.11	1	74.24.38,65	14,44	
315	B. (w.) IX. 119 .....	Apr. 13	7½	- 3,45	25,46	9.6.23	1	77.47.26,76	14,57	
316	H. C. 18251 .....	12	7	- 2,36	45,23	9.7.42	1	74.22.46,72	14,65	
317	H. C. 18264 .....	Mar. 12	8	- 3,15	31,16	9.8.9	1	70.34.32,84	14,68	
318	H. C. 18320 .....	Apr. 13	7	- 1,03	4,30	9.9.57	1	70.36.5,98	14,79	
319	α Lyncis .....	Mar. 3		- 0,86	2,49	9.12.2	1	54.59.4,12	14,90	
320	α Lyncis R. ....	3		- 0,86	3,44		1	54.59.2,55		
321	H. C. 18414 .....	Apr. 12	7	- 1,82	31,53	9.13.12	2	72.46.32,10	14,97	
322	—	13	7	- 1,76	29,52					
323	B. (w.) IX. 398 .....	12	6	- 2,58	26,28	9.18.49	1	75.3.27,73	15,30	
324	h Ursæ Majoris ....	Mar. 3		+ 4,16	43,78	9.19.48	1	26.17.43,48	15,35	
325	h Ursæ Majoris R. .	3		+ 4,16	41,12		1	26.17.42,17		
326	α Hydræ .....	12		- 8,33	7,87					
327	—	Apr. 1		- 9,38	8,84					
328	—	13		- 9,56	10,33	9.20.19	4	98.1.10,19	15,38	
329	—	20		- 9,56	8,64					
330	α Hydræ R. ....	Mar. 12		- 8,33	9,76					
331	—	Apr. 1		- 9,38	5,97		3	98.1.7,47		
332	—	20		- 9,56	8,30					
333	H. C. 18677 .....	2	8	- 3,56	43,16	9.22.21	1	76.24.44,55	15,49	
334	B. (w.) IX. 493 .....	12	7½	- 3,89	49,27	9.23.4	1	79.11.50,51	15,53	No. 340. H. C. 18825 has greater N.P.D. by 5', agreeing in R.A. The observer remarked that there was no star in the place of H. C.
335	λ Leonis .....	Feb. 5		- 4,56	50,88	9.23.16	1	66.22.52,66	15,55	
336	ξ Leonis .....	Mar. 3		- 4,96	49,36					
337	—	4		- 4,95	50,20	9.23.58	2	78.2.51,07	15,58	
338	ξ Leonis R. ....	4		- 4,95	53,17		1	78.2.52,62		
339	B. (w.) IX. 533 .....	Apr. 13	8½	- 3,33	50,62	9.24.38	1	77.36.51,93	15,62	
340	B. (w.) IX. 591 .....	2	7.8	- 3,23	2,74	9.27.4	1	75.16.4,18	15,75	
341	H. C. 18861 .....	12	8¾	- 1,08	43,80	9.28.11	1	70.24.45,49	15,81	
342	B.A.C. 5299 .....	13	6.7	- 2,82	21,74	9.31.15	1	76.1.23,15	15,98	
343	o Leonis .....	Mar. 3		- 5,16	10,60					
344	—	4		- 5,15	11,41	9.33.15	2	79.26.12,24	16,09	
345	B. (w.) IX. 782 .....	Apr. 12	8	- 2,75	44,55					
346	—	13	8	- 2,69	45,21	9.35.39	2	75.35.46,31	+ 16,21	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
347	B. (w.) IX. 808.....	Apr. 12	8 $\frac{1}{4}$	- 4.78	11,69	9.36.55	1	82.10.12,81	+ 16,28	
348	ε Leonis.....	24		+ 1.43	46,14					
349	—	26		+ 1.57	45,14	9.37.27	2	65.32.47,43	16,30	
350	ε Leonis R.....	24		+ 1.43	47,92					
351	—	26		+ 1.57	50,07		2	65.32.47,94		
352	B. (w.) IX. 872.....	13	8	- 2.76	19,29	9.39.48	1	75.50.20,71	16,42	
353	H. C. 19239.....	Mar. 23	7	- 3.71	31,05	9.41.3	1	74.42.32,52	16,48	
354	B. (w.) IX. 929.....	4	9	- 4.62	24,72	9.42.48	1	75.11.26,16	16,57	
355	B. (w.) IX. 962.....	Apr. 13	8	- 4.91	13,02	9.44.21	1	82.50.14,12	16,64	
356	B. (w.) IX. 1011.....	Mar. 4	8.9	- 5.49	2,46					
357	—	Apr. 10	8	- 4.85	2,42	9.46.50	3	82.13.4,32	16,76	
358	—	12	8	- 4.76	4,73					
359	H. C. 19438.....	Mar. 23	8 $\frac{1}{4}$	- 3.73	24,74	9.48.26	1	74.33.26,21	16,84	
360	H. C. 19442.....	23	7	- 3.73	13,05	9.48.35	1	74.34.14,52	16,85	
361	ν Leonis.....	Apr. 27		- 2.19	1,71	9.50.15	1	76.51.3,07	16,93	
362	B. (w.) IX. 1137....	Mar. 23	9	- 4.62	18,86	9.53.11	1	78.31.20,13	17,06	
363	H. C. 19589.....	Apr. 20		- 2.49	21,05	9.54.9	1	76.23.22,44	17,11	
364	η Leonis.....	27		- 0.73	1,27	9.59.16	1	72.31.2,85	17,34	
365	Regulus.....	Feb. 6		- 4.47	38,89					
366	—	Mar. 3		- 4.95	39,47					
367	—	23		- 4.37	38,47					
368	—	Apr. 1		- 3.91	39,57					
369	—	10		- 3.37	40,16					
370	—	12		- 3.25	38,96	10.0.29	10	77.18.40,70	17,39	
371	—	13		- 3.19	40,34					
372	—	21		- 2.71	40,25					
373	—	24		- 2.53	39,88					
374	—	26		- 2.41	37,70					
375	Regulus R.....	Feb. 6		- 4.47	42,98					
376	—	Mar. 3		- 4.95	40,99					
377	—	23		- 4.37	41,35					
378	—	Apr. 10		- 3.37	40,59					
379	—	12		- 3.25	39,05		9	77.18.40,31		
380	—	13		- 3.19	39,12					
381	—	21		- 2.71	41,01					
382	—	24		- 2.53	42,85					
383	—	26		- 2.41	40,26					
384	λ Ursæ Majoris....	10		+ 5.40	51,87	10.8.9	2	46.20.53,44	17,71	
385	—	24		+ 7.42	53,04					
386	λ Ursæ Majoris R..	10		+ 5.40	55,13		2	46.20.54,14		
387	—	24		+ 7.42	53,69					
388	37 Leonis.....	Mar. 4		- 4.85	6,66	10.8.44	2	75.32.7,59	17,73	
389	—	5		- 4.82	5,66					
390	37 Leonis R.....	4		- 4.85	8,02		1	75.32.7,34		
391	γ Leonis.....	Feb. 6		- 5.08	37,84	10.11.48	1	69.24.39,55	17,86	
392	γ Leonis R.....	6		- 5.08	42,86		1	69.24.41,90		
393	42 Leonis.....	Mar. 4		- 4.76	46,03	10.13.52	2	74.16.47,63	17,94	
394	—	5		- 4.74	46,25					
395	42 Leonis R.....	4		- 4.76	(52,69)			74.16.(51,94)		
396	B. (w.) x. 315.....	Feb. 6	8	- 3.75	58,53	10.18.28	1	85.18.59,54	18,12	No. 395. The discordance of this observation is probably owing to the star being too faint, as noted by the observer.
397	B. (w.) x. 422.....	6	9	- 3.79	22,07	10.24.9	2	84.18.22,48	18,33	
398	—	Apr. 20	9	- 7.00	20,78					
399	ρ Leonis.....	1		- 4.63	58,20	10.25.1	1	79.55.59,40	18,36	
400	B. (w.) x. 576.....	20	10	- 5.55	29,55	10.32.17	1	86.43.30,54	18,61	
401	H. C. 20732.....	20	9	- 3.98	52,41	10.37.42	2	81.13.52,66	18,77	
402	—	24	8	- 3.74	50,61					
403	*.....	20	10	- 3.98	29,02	10.38.18	1	81.14.30,17	18,79	
404	B. (w.) x. 776.....	20	8	- 4.64	51,32	10.43.12	2	83.37.52,34	18,94	Nos. 404 and 405. This is H. C. 20871. H. C. 20870 is the same star, with an N.P.D. 1' too small.
405	—	24	7 $\frac{1}{2}$	- 4.43	51,21					
406	B. (w.) x. 846.....	20	7.8	- 5.42	17,10	10.46.14	1	86.33.18,09	19,02	
407	H. C. 21015.....	24	7 $\frac{1}{2}$	- 3.81	51,67	10.48.14	1	81.31.52,81	19,08	
408	B. (w.) x. 964.....	May 3	8	- 3.97	21,02	10.53.24	1	83.52.22,08	19,21	
409	α Ursæ Majoris....	Aug. 31		- 1.17	4,27					
410	—	Sept. 30		- 11.18	4,32	10.54.33	2	27.27.4,03	19,24	
411	α Ursæ Majoris R..	Aug. 31		- 1.17	3,31					
412	—	Sept. 30		- 11.18	2,94		2	27.27.4,16		
413	χ Leonis.....	Apr. 1		- 5.08	51,36					
414	—	2		- 5.03	51,17	10.57.23	2	81.51.52,40	19,31	
415	B. (w.) x. 1058....	May 3	8	- 4.85	9,03	10.58.39	1	86.48.10,01	+ 19,34	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
416	B. (w.) XI. 77.....	May 3	7.8	- 3.13	1,90	11. 5. 57	1	81. 15. 3.05	+ 19,50	
417	B. (w.) XI. 142.....	3	10	- 5.81	52,28	11. 9. 11	1	90. 15. 53,25	19,56	
418	B. (w.) XI. 206.....	3	7	- 4.77	57,42	11. 13. 20	2	86. 45. 58,36	19,64	Nos. 418 and 419. Bessel's R.A. is 1 <sup>m</sup> less.
419	—	5	8	- 4.66	57,33					
420	Leonis.....	Apr. 2		- 4.57	19,95	11. 16. 12	1	78. 39. 21,21	19,69	
421	Leonis R.....	2		- 4.57	21,77		1	78. 39. 21,24		
422	B. (w.) XI. 312.....	May 3	7.8	- 6.05	42,83					Nos. 422 and 423. Bessel's Declination is 1' too great. See Vol. XVIII. p. 138.
423	—	4	9	- 6.01	44,17	11. 18. 18	2	91. 18. 44,48	19,72	
424	B. (w.) XI. 345.....	Apr. 17	9	- 4.22	17,97	11. 20. 9	1	81. 18. 19,12	19,75	
425	H. C. 22079.....	Mar. 5	9	- 5.43	37,02	11. 31. 24	1	83. 23. 38,10	19,90	
426	Virginis.....	5		- 5.47	26,37	11. 38. 15	1	82. 38. 27,48	19,96	
427	B. (w.) XI. 737.....	5	9	- 5.40	37,42	11. 42. 35	1	84. 15. 38,47	20,00	
428	*.....	5	8.9	- 5.40	16,69	11. 42. 42	1	84. 13. 17,74	20,00	No. 428. Not in Weisse's Catalogue, nor in H. C. The R.A. is inferred from the note of the observer that it followed the preceding star 7 <sup>a</sup> .
429	B. (w.) XI. 777.....	Apr. 17	9	- 5.23	40,58	11. 44. 51	1	86. 4. 41,58	20,01	
430	B. (w.) XI. 867.....	Mar. 5	8	- 4.73	56,17		2	93. 32. 57,86	20,04	
431	—	Apr. 17	7	- 6.57	57,49	11. 50. 33				
432	B. (w.) XI. 895.....	May 1	7	- 5.78	36,82	11. 52. 0	1	91. 5. 37,80	20,04	
433	Virginis.....	Mar. 5	1	- 5.51	34,05					
434	—	6		- 5.53	35,96	11. 53. 17	2	82. 33. 36,11	20,05	
435	B. (w.) XI. 920.....	Apr. 17	8½	- 5.44	19,36	11. 53. 25	1	87. 18. 20,34	20,05	
436	B. (w.) XI. 944.....	27		- 3.57	14,38	11. 55. 0	1	81. 6. 15,54	20,05	
437	B. (w.) XI. 959.....	May 14		- 5.35	20,17	11. 55. 58	1	91. 37. 21,16	20,05	
438	B. (w.) XI. 975.....	Apr. 17	7½	- 5.19	48,39	11. 57. 2	1	86. 0. 49,39	20,05	
439	Virginis.....	June 24		+ 1.01	39,97	11. 57. 40	1	80. 26. 41,15	20,05	
440	10 Virginis.....	Mar. 19	7	- 5.71	12,26	12. 2. 6	1	87. 16. 13,24	20,05	
441	B. (w.) XII. 44.....	May 14	7.8	- 6.25	52,40	12. 3. 46	1	95. 5. 53,47	20,05	
442	B. (w.) XII. 121.....	Mar. 19	8½	- 5.49	29,91					
443	—	May 14	8½	- 6.60	33,08	12. 8. 30	2	96. 38. 32,66	20,04	
444	B. (w.) XII. 128.....	Mar. 19	8½	- 5.49	31,05					
445	—	May 14	7¾	- 6.62	29,49	12. 8. 45	2	96. 42. 31,44	20,04	
446	Virginis.....	1		- 5.32	36,81	12. 12. 20	1	89. 50. 37,78	20,02	
447	B. (w.) XII. 249.....	Mar. 19	9	- 5.46	32,32					
448	—	May 4	8.9	- 6.35	34,58	12. 15. 20	2	94. 57. 34,52	20,01	
449	B. (w.) XII. 308.....	Mar. 19	9	- 5.40	27,90	12. 19. 22	1	95. 14. 28,98	19,98	
450	B. (w.) XII. 332.....	May 4	10	- 6.04	32,29	12. 20. 20	1	93. 51. 33,32	19,98	
451	B. (w.) XII. 414.....	Mar. 19	9	- 5.42	16,13					
452	—	May 4	8½	- 5.89	15,80	12. 24. 38	2	93. 20. 16,99	19,94	
453	Corvi.....	Mar. 17		- 3.66	37,38					
454	—	Apr. 19		- 8.27	40,43	12. 26. 37	2	112. 34. 40,85	19,92	
455	Corvi R.....	Mar. 17		- 3.66	43,38		1	112. 34. 42,20		
456	B. (w.) XII. 474.....	May 4	8	- 6.87	26,66	12. 28. 14	1	98. 14. 27,95	19,90	No. 455. This N.P.D. appears to be discordant partly from unfavorable circumstances.
457	B. (w.) XII. 517.....	19	9	- 5.29	28,59	12. 31. 4	1	94. 30. 29,65	19,87	
458	B. (w.) XII. 523.....	4	8½	- 6.59	10,78	12. 31. 26	1	97. 6. 11,98	19,86	
459	B. (w.) XII. 569.....	4	8½	- 5.48	17,79	12. 34. 14	1	91. 56. 18,78	19,83	
460	B. (w.) XII. 677.....	4	8	- 6.07	53,24	12. 39. 54	1	95. 4. 54,31	19,75	
461	B.A.C. 4312.....	4	7	- 6.86	53,70	12. 43. 41	1	99. 31. 55,11	19,69	No. 461. The observer estimated the magnitude of the companion at 9.10.
462	B. (w.) XII. 772.....	15	8½	- 5.27	16,49	12. 45. 21	1	93. 19. 17,51	19,66	
463	B. (w.) XII. 912.....	15	8	- 4.81	44,21	12. 53. 2	1	91. 45. 45,20	19,52	
464	B. (w.) XIII. 37.....	19	8	- 6.21	29,47	13. 3. 35	1	98. 47. 30,81	19,28	
465	B. (w.) XIII. 163.....	19	8	- 6.65	45,84	13. 10. 22	1	101. 19. 47,38	19,12	
466	Spica.....	Apr. 16		- 5.93	14,76	13. 17. 24	1	100. 23. 16,24	18,92	
467	Spica R.....	16		- 5.93	13,18		1	100. 23. 12,47		
468	B. (w.) XIII. 305.....	May 19	8.9	- 6.13	20,82	13. 19. 9	1	99. 49. 22,25	18,87	
469	B. (w.) XIII. 391.....	15	8	- 6.05	36,05					
470	—	19	7.8	- 5.99	36,02	13. 24. 2	2	99. 29. 37,43	18,72	
471	H. C. 25180.....	19	8¾	- 5.61	8,95	13. 30. 33	1	98. 20. 10,25	18,51	
472	B. (w.) XIII. 605.....	19	9	- 5.64	0,72	13. 35. 11	1	98. 52. 2,07	18,35	
473	Virginis.....	19	6.7	- 5.02	46,07	13. 40. 34	1	96. 5. 47,20	18,16	
474	B. (w.) XIII. 801.....	19	9	- 6.25	25,82	13. 47. 9	1	103. 29. 27,51	17,90	
475	Arcturus.....	July 12		+ 5.64	39,28	14. 8. 55	1	70. 2. 40,97	16,96	
476	Arcturus R.....	12		+ 5.64	42,76		1	70. 2. 41,82		
477	H. C. 26541.....	June 4	7.8	- 6.27	53,49					
478	—	8	8.9	- 6.32	53,08	14. 25. 53	2	108. 51. 55,17	16,13	
479	B. (w.) XIV. 607.....	4	8	- 4.93	24,36					
480	—	8	8	- 4.88	24,63	14. 33. 14	2	103. 17. 26,18	15,74	
481	Bootis.....	July 5		+ 8.35	54,85	14. 38. 31	1	62. 17. 56,66	15,45	
482	Bootis R.....	5		+ 8.35	58,34		1	62. 17. 57,28		
483	B. (w.) XIV. 735.....	June 4	8.9	- 4.46	52,11					
484	—	8	8.9	- 3.36	52,49	14. 39. 41	2	101. 44. 53,87	+ 15,38	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
485	$\alpha^2$ Libræ.....	May 3		- 4.65	24.84	14. 42. 42	1	105. 25. 26.64	+ 15.21	No. 439. The seconds of B.A.C., as deduced from Lacaille, are 29",1. Two observations of Lalande give 11",9.
486	$\xi^3$ Libræ.....	3		- 4.54	31.47	14. 48. 45	1	100. 48. 32.98	14.85	
487	$\psi$ Bootis.....	June 15		+ 5.26	19.40	14. 58. 6	1	62. 28. 21.21	14.29	
488	$\psi$ Bootis R.....	15		+ 5.26	20.14		1	62. 28. 19.08		
489	B.A.C. 5039.....	16	8	- 5.83	6.14	15. 10. 30	1	113. 43. 8.09	13.52	
490	$\gamma$ Serpentis.....	May 12		- 3.07	59.14	15. 15. 23	1	76. 54. 0.50	13.20	
491	H. C. 28062.....	June 16	8 $\frac{1}{4}$	- 5.13	6.76	15. 16. 47	1	111. 24. 8.68	13.10	
492	H. C. 28212.....	16	7	- 4.70	54.32	15. 22. 3	1	110. 12. 56.23	12.76	
493	B. (w.) xv. 472.....	16	8 $\frac{1}{2}$	- 3.44	56.34	15. 25. 50	1	104. 21. 58.09	12.50	
494	H. C. 28453.....	16	8	- 3.83	29.06	15. 30. 17	1	107. 10. 30.90	12.18	
495	H. C. 28560.....	4	10	- 4.34	20.79					
496	-----	16	9	- 4.68	25.65	15. 33. 22	2	112. 33. 25.16	11.98	
497	$\eta$ Libræ.....	May 4		- 3.36	49.38	15. 35. 45	1	105. 11. 51.17	11.80	
498	$\alpha$ Serpentis.....	July 3		+ 2.77	17.35					
499	-----	14		+ 3.82	16.77	15. 36. 59	2	83. 6. 18.15	11.72	
500	$\alpha$ Serpentis R.....	3		+ 2.77	20.26					
501	-----	14		+ 3.82	19.39		2	83. 6. 19.49		
502	H. C. 28752.....	June 16	9.10	- 4.51	31.29	15. 40. 4	1	113. 13. 33.24	11.50	
503	H. C. 28813.....	4	9	- 3.92	17.64	15. 42. 23	1	112. 10. 19.57	11.33	
504	B. (w.) xv. 845.....	16	9	- 2.84	11.24	15. 43. 41	1	104. 11. 12.98	11.24	
505	$\theta$ Libræ.....	May 4		- 3.03	23.50	15. 45. 24	1	106. 17. 25.33	11.12	
506	H. C. 28966.....	June 16	9	- 4.10	50.18					
507	-----	30	8 $\frac{3}{4}$	- 4.37	46.49	15. 48. 2	3	112. 44. 50.35	10.92	
508	-----	July 1	8	- 4.39	48.57					
509	H. C. 29130.....	June 16	8.9	- 3.29	4.17					
510	-----	July 1	9	- 3.30	1.95	15. 53. 40	2	109. 2. 4.94	10.50	
511	H. C. 29136.....	6	8	- 4.66	46.63					
512	-----	7	8	- 4.67	45.15	15. 53. 59	2	114. 35. 47.85	10.48	
513	$\beta$ Scorpii.....	May 31		- 3.06	44.24					
514	-----	June 30		- 3.25	43.60	15. 56. 50	2	109. 23. 45.81	10.27	
515	B.A.C. 5330.....	May 31		- 3.06	31.18	15. 56. 50	1	109. 23. 33.07	10.27	
516	H. C. 29306.....	July 1	8	- 2.78	53.55	15. 58. 45	1	107. 31. 55.40	10.11	
517	H. C. 29372.....	7	8	- 3.03	33.31	16. 0. 45	1	109. 3. 35.19	9.96	
518	$\nu$ Scorpii.....	May 31		- 2.80	15.49	16. 3. 24	1	109. 4. 17.37	9.77	
519	B.A.C. 5408.....	June 30	6	- 2.63	3.07					
520	-----	July 1	7	- 2.64	0.94	16. 6. 7	3	108. 9. 4.09	9.56	
521	-----	7	6.7	- 2.61	2.67					
522	H. C. 29696.....	1	7.8	- 2.52	49.40					
523	-----	5	8	- 2.50	50.53	16. 11. 0	2	108. 27. 51.84	9.18	
524	H. C. 29906.....	June 30		- 3.47	4.62					
525	-----	July 1	7.8	- 3.49	5.00	16. 19. 14	2	115. 7. 6.77	8.54	
526	Antares.....	6		- 3.78	53.22					
527	-----	7		- 3.81	53.37					
528	-----	8		- 3.84	54.41	16. 20. 20	4	116. 5. 55.47	8.45	
529	-----	12		- 3.96	53.03					
530	Antares R.....	6		- 3.78	56.35					
531	-----	7		- 3.81	56.38					
532	-----	8		- 3.84	54.08		4	116. 5. 54.69		
533	-----	12		- 3.96	56.82					
534	H. C. 30248.....	June 30	8	- 3.02	46.62	16. 31. 1	1	115. 45. 48.58	7.59	
535	H. C. 30544.....	30	8.9	- 2.39	22.93	16. 40. 32	1	114. 48. 24.89	6.82	
536	$\epsilon$ Herculis.....	16		+ 2.94	6.80	16. 54. 38	1	58. 51. 8.58	5.64	
537	$\epsilon$ Herculis R.....	16		+ 2.94	7.86		1	58. 51. 6.85		
538	$\eta$ Ophiuchi.....	July 27		+ 0.41	10.24					
539	-----	Aug. 23		+ 0.72	11.09	17. 1. 54	2	105. 32. 12.47	5.03	
540	$\eta$ Ophiuchi R.....	July 27		+ 0.41	13.63		1	105. 32. 12.57		
541	$\alpha$ Herculis.....	June 16		+ 1.55	12.42					
542	-----	30		+ 4.06	14.07	17. 7. 54	2	75. 26. 14.68	4.52	
543	$\alpha$ Herculis R.....	16		+ 1.55	14.61					
544	-----	30		+ 4.06	14.84		2	75. 26. 14.05		
545	$\xi$ Ophiuchi.....	Aug. 23		- 0.75	57.42	17. 12. 8	1	110. 56. 59.34	4.15	
546	$\nu$ Serpentis.....	July 27		+ 1.56	28.26	17. 12. 30	1	102. 41. 29.90	4.13	
547	$\theta$ Ophiuchi.....	June 30		- 0.79	43.41	17. 12. 56	1	114. 50. 45.37	4.08	
548	$\rho$ Herculis <i>sf</i> .....	15		+ 2.08	52.36					
549	-----	July 19		+ 10.57	50.74	17. 18. 35	2	52. 42. 53.03	3.60	
550	$\rho$ Herculis <i>sf</i> R....	June 15		+ 2.08	52.73					
551	-----	July 19		+ 10.57	52.98		2	52. 42. 52.10		
552	$\alpha$ Ophiuchi.....	June 24		+ 2.61	40.12	17. 28. 4	1	77. 19. 41.45	2.79	
553	$\xi$ Serpentis.....	July 19		+ 1.42	58.86	17. 29. 7	1	105. 18. 0.65	+ 2.69	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
554	H. C. 32211.....	Aug. 4	8	- 0,33	16,63	17. 33. 22	1	113. 16. 18,58	+ 2,33	No. 557. $\Sigma$ 1976 in the Catalogue of 1830. No. 558. The seconds of the N.P.D. of B.A.C. are 30",9. The star is H. C. 32491, the N.P.D. of which agrees well enough with the Cambridge observation.
555	58 Ophiuchi .....	June 30		+ 0,61	19,81	17. 34. 34	1	111. 36. 21,74	2,23	
556	H. C. 32271.....	Aug. 5	8.9	+ 1,30	48,21	17. 34. 43	1	107. 25. 50,06	2,21	
557	H. C. 32386.....	July 19	8	+ 8,88	28,71	17. 36. 42	1	63. 22. 30,53	2,04	
558	B.A.C. 6023.....	22		+ 0,16	11,10	17. 40. 55	1	114. 9. 13,05	1,66	
559	B.A.C. 6027.....	21	8.9	+ 0,51	9,65	17. 42. 9	1	112. 52. 11,60	1,56	
560	B.A.C. 6035.....	19	7 $\frac{1}{4}$	+ 6,38	5,83	17. 43. 9	1	80. 6. 7,03	1,47	
561	H. C. 32852.....	Aug. 5	9	+ 0,69	30,26	17. 50. 3	1	112. 21. 32,20	0,87	
562	$\zeta$ Serpentis.....	June 24		+ 2,06	32,64	17. 52. 40	1	93. 40. 33,67	0,64	
563	H. C. 33089.....	Aug. 5	8	+ 2,29	54,59	17. 56. 2	1	107. 1. 56,43	+ 0,35	
564	B.A.C. 6141.....	July 22		+ 1,17	17,29	18. 0. 15	1	114. 0. 19,24	- 0,03	
565	$\alpha$ Herculis .....	19		+ 8,73	12,33	18. 1. 46	1	61. 15. 14,13	0,16	
566	$\alpha$ Herculis R.....	19		+ 8,73	16,19		1	61. 15. 15,14		
567	B.A.C. 6158.....	Aug. 4	7	+ 1,92	55,99					
568	-----	5	7.8	+ 1,89	53,96	18. 2. 29	3	109. 51. 56,69	0,22	
569	-----	6	7 $\frac{1}{4}$	+ 1,89	54,39					
570	H. C. 33427 .....	27	8	- 0,75	9,08	18. 4. 53	1	117. 32. 11,05	0,42	
571	$\mu^1$ Sagittarii.....	July 27		+ 1,84	30,56	18. 4. 55	1	111. 5. 32,48	0,44	
572	16 Sagittarii.....	Aug. 5		+ 1,95	33,78	18. 6. 25	1	110. 25. 35,69	0,57	
573	H. C. 33516 .....	6	9	+ 1,13	33,11	18. 7. 32	1	113. 56. 35,06	0,66	
574	H. C. 33651 .....	27		+ 1,01	26,48	18. 10. 22	1	112. 47. 28,43	0,90	
575	H. C. 33806.....	27	8	+ 0,12	18,90	18. 14. 21	1	116. 14. 20,86	1,25	
576	H. C. 33885.....	13	9	+ 1,59	13,62	18. 16. 10	1	113. 3. 15,57	1,41	
577	$\lambda$ Sagittarii.....	July 27		+ 1,74	51,38	18. 18. 50	1	115. 29. 53,34	1,65	
578	$\delta$ Ursæ Minoris....	19		+ 8,98	4,21					
579	-----	19		+ 8,98	3,97					
580	-----	Aug. 4		+ 13,08	6,25	18. 20. 5	5	3. 24. 5,08	1,76	
581	-----	5		+ 13,28	5,05					
582	-----	6		+ 13,48	5,21					
583	$\delta$ Ursæ Minoris R..	July 19		+ 8,98	4,32					
584	-----	19		+ 8,98	6,25					
585	-----	19		+ 8,98	6,00					
586	-----	19		+ 8,98	7,06					
587	-----	19		+ 8,98	6,24		8	3. 24. 6,75		
588	-----	Aug. 4		+ 13,08	7,83					
589	-----	5		+ 13,28	5,75					
590	-----	6		+ 13,48	5,65					
591	B.A.C. 6273 .....	27	7.8	+ 0,67	42,18	18. 20. 14	1	115. 20. 43,14	1,76	
592	B.A.C. 6304.....	13	8.9	+ 1,69	42,17	18. 24. 11	2	114. 12. 43,99	2,11	
593	-----	27	7.8	+ 1,22	41,91					
594	H. C. 34268 .....	13	9	+ 1,71	39,78	18. 24. 45	1	114. 13. 41,73	2,17	
595	H. C. 34428 .....	27	7.8	+ 2,84	20,18	18. 28. 30	1	109. 31. 22,08	2,49	
596	H. C. 34433.....	27	7	+ 2,83	33,34	18. 28. 44	1	109. 32. 35,24	2,50	
597	$\alpha$ Lyrae .....	July 26		+ 10,54	1,26	18. 31. 56	2	51. 21. 2,23	2,79	
598	-----	Sept. 8		+ 18,27	0,40					
599	$\alpha$ Lyrae R.....	July 26		+ 10,54	3,86					
600	-----	Sept. 8		+ 18,27	5,99		2	51. 21. 4,25		
601	$\beta$ Lyrae.....	Aug. 5		+ 11,94	18,04					
602	-----	6		+ 12,16	19,69	18. 44. 37	3	56. 48. 20,30	3,88	
603	-----	13		+ 13,55	18,03					
604	$\beta$ Lyrae R.....	5		+ 11,94	21,19					
605	-----	6		+ 12,16	21,99		3	56. 48. 21,01		
606	-----	13		+ 13,55	22,69					
607	B.A.C. 6485.....	6	7	+ 3,70	53,26	18. 52. 42	1	112. 53. 55,21	4,57	
608	$\alpha$ Sagittarii.....	June 30		+ 4,37	10,07					
609	-----	Sept. 21		+ 2,54	11,44	18. 55. 49	3	111. 57. 12,26	4,84	
610	-----	Oct. 18		+ 1,88	9,49					
611	$\pi$ Sagittarii.....	June 30		+ 4,58	13,02					
612	-----	Aug. 25		+ 3,90	13,07	19. 0. 58	3	111. 15. 14,74	5,27	
613	-----	Oct. 18		+ 2,28	12,36					
614	H. C. 36128.....	July 23	7.8	+ 5,20	27,35	19. 7. 31	1	108. 54. 29,23	5,82	
615	H. C. 36501.....	Sept. 25	7	+ 4,74	28,78	19. 15. 16	1	107. 28. 30,63	6,47	
616	H. C. 36504.....	July 23	8	+ 5,23	56,51	19. 15. 25	1	112. 50. 58,46	6,49	
617	H. C. 36516.....	23	7	+ 5,25	14,30					
618	-----	Aug. 26	8.9	+ 4,16	16,71	19. 15. 46	2	112. 51. 17,46	6,51	
619	-----	Sept. 21	8	+ 3,05	(9,65)					
620	H. C. 36777.....	Aug. 26	9	+ 5,20	16,53	19. 21. 22	1	109. 51. 18,44	6,97	No. 616 and 617. In H. C. the preceding star has only 4" less N.P.D. than the following; but the Cambridge observations are confirmed by Argelander $\alpha$ . 240, Nos. 19 and 21. No. 619. This observation by an inexperienced observer is not thought of sufficient weight to be grouped with Mr Breen's.
621	H. C. 36814.....	Sept. 25	9	+ 2,64	51,29	19. 22. 13	1	114. 23. 53,24	7,04	
622	$h^2$ Sagittarii.....	Aug. 26		+ 4,20	16,91					
623	-----	Sept. 21		+ 2,79	15,89	19. 27. 42	2	115. 12. 18,36	- 7,48	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
624	H. C. 37071.....	Sept. 25	8 $\frac{1}{4}$	+ 3,66	33,39	19.28. 7	1	112.13.35,32	-7,53	
625	53 Sagittarii.....	17		+ 3,61	34,61	19.30.56	1	113.45.36,56	7,75	
626	B.A.C. 6727.....	17		+ 3,61	46,23	19.31.13	1	113.45.48,18	7,77	
627	e <sup>3</sup> Sagittarii.....	Aug. 26		+ 6,61	55,46					
628	-----	30		+ 6,54	53,10	19.34. 3	3	106.27.56,75	8,00	
629	-----	Sept. 21		+ 5,96	56,21					
630	H. C. 37568.....	Aug. 30	8.9	+ 4,32	20,92					
631	-----	Sept. 17	9 $\frac{1}{2}$	+ 3,20	(32,01)	19.39. 6	1	116.15.22,88	8,41	No. 631. A low and faint star observed under unfavourable circumstances. The observation of Aug. 30 is preferable.
632	$\gamma$ Aquilæ.....	25		+ 14,21	36,92	19.39.13	1	79.44.38,13	8,41	
633	$\gamma$ Aquilæ R.....	25		+ 14,21	38,51		1	79.44.38,04		
634	$\alpha$ Aquilæ.....	16		+ 13,87	8,66	19.43.34	2	81.31. 9,91	8,75	
635	-----	Dec. 18		+ 7,91	8,88					
636	$\alpha$ Aquilæ R.....	Sept. 16		+ 13,87	9,30		2	81.31. 8,12		
637	-----	Dec. 18		+ 7,91	7,75					
638	B.A.C. 6814.....	Aug. 30	7	+ 5,14	12,78					Nos. 638—640. The N.P.D. of B.A.C. is about 1' less. The Mag. by Argelander z. 311, No. 27, is 6, and by Lalande, 7 $\frac{1}{2}$ . The Mag. 2 of H. C. 37813 is evidently a mistake.
639	-----	Sept. 2	7.8	+ 4,98	15,96	19.45.26	3	114.18.16,45	8,91	
640	-----	3	7 $\frac{1}{2}$	+ 4,92	14,76					
641	H. C. 37846.....	3	8 $\frac{1}{4}$	+ 4,96	23,37					
642	-----	21		+ 3,94	19,05	19.46.16	2	114.17.23,16	8,97	
643	$\beta$ Aquilæ.....	25		+ 13,01	30,52	19.48. 3	1	83.57.31,58	9,10	
644	$\beta$ Aquilæ R.....	25		+ 13,01	32,90		1	83.57.32,58		
645	H. C. 37969.....	Aug. 30	8	+ 7,34	38,31					
646	-----	Sept. 17	8 $\frac{1}{4}$	+ 6,89	41,75	19.49.11	2	105.50.41,84	9,19	
647	H. C. 37980.....	3	8	+ 5,27	20,38	19.49.32	1	113.43.22,33	9,22	
648	g Sagittarii.....	Aug. 30	6	+ 7,35	43,95	19.49.33	2	105.52.47,31	9,22	
649	-----	Sept. 17	7	+ 6,89	47,06					
650	H. C. 38022.....	2	8	+ 5,36	58,45	19.50.10	1	113.44. 0,40	9,27	
651	H. C. 38161.....	17		+ 6,44	15,10	19.53.22	1	107.57.16,96	9,52	
652	H. C. 38220.....	2	7.8	+ 7,06	19,59	19.54.37	1	107.45.21,45	9,62	No. 652. This is Argelander z. 244, No. 38. There is no star in the place of H. C., the N.P.D. of which appears to be 7' too great.
653	B.A.C. 6878.....	Aug. 30	7 $\frac{1}{2}$	+ 5,94	20,13	19.54.58	2	113. 0.22,76	9,65	
654	-----	Sept. 3	7.8	+ 5,73	21,49					
655	B.A.C. 6889.....	21		+ 5,21	32,53	19.56.15	1	111.43.34,46	9,75	
656	H. C. 38339.....	2	8	+ 6,87	14,24	19.57.30	1	109. 7.16,12	9,84	
657	B.A.C. 6907.....	25	7.8	+ 7,18	6,14	20. 0. 8	2	105.27. 7,48	10,04	
658	-----	Oct. 7	7.8	+ 6,71	5,22					
659	H. C. 38498.....	Sept. 3	8	+ 5,38	45,64	20. 1.11	2	115.42.47,50	10,12	
660	-----	16	9	+ 4,52	45,44					
661	H. C. 38503.....	Aug. 30	8	+ 7,22	26,10	20. 1.11	2	108.46.28,99	10,12	
662	-----	Sept. 17		+ 6,52	28,14					
663	H. C. 38705.....	25	9	+ 6,86	32,82	20. 5.33	1	107. 6.34,66	10,44	
664	*.....	25	9.10	+ 6,89	5,54	20. 5.55	1	107. 3. 7,38	10,48	No. 664. The R.A. is from Argelander z. 244, No. 53.
665	H. C. 38740.....	Aug. 27	7.8	+ 7,36	3,69	20. 6. 9	1	109.39. 5,59	10,49	
666	H. C. 38765.....	3	8	+ 7,68	42,05	20. 6.47	2	107.17.44,57	10,54	
667	-----	Oct. 7	8.9	+ 6,33	43,38					
668	$\alpha^1$ Capricorni.....	July 3		+ 6,58	41,54					
669	-----	Sept. 2		+ 8,81	39,78	20. 9.27	3	102.57.42,59	10,74	
670	-----	17		+ 8,55	41,46					
671	$\alpha^1$ Capricorni R. ...	July 3		+ 6,58	45,24					
672	-----	Aug. 30		+ 8,83	43,66		3	102.57.43,73		
673	-----	Sept. 2		+ 8,81	45,01					
674	H. C. 38876.....	21		+ 6,72	0,12	20. 9.31	1	108.43. 1,99	10,74	
675	$\alpha^2$ Capricorni.....	July 3		+ 6,63	55,27					
676	-----	Sept. 2		+ 8,76	55,67	20. 9.50	4	102.59.58,54	10,76	
677	-----	17		+ 8,51	57,86					
678	-----	Oct. 7		+ 7,91	58,71					
679	$\alpha^2$ Capricorni R. ...	July 3		+ 6,63	60,74					
680	-----	Aug. 30		+ 8,79	60,46		3	102.59.59,59		
681	-----	Sept. 2		+ 8,76	60,29					
682	B.A.C. 6982.....	Oct. 1	7 $\frac{3}{4}$	+ 3,98	52,50	20.10.55	1	115.40.54,46	10,85	No. 682. This is H. C. 38947, the N.P.D. of which agrees with the Cambridge observation better than that of B.A.C.
683	H. C. 38974.....		8.9	+ 4,01	12,04	20.11.34	1	115.40.14,00	10,89	
684	B.A.C. 6987.....	Sept. 25	7.8	+ 6,20	23,69	20.11.55	1	110. 6.25,60	10,92	
685	B.A.C. 6992.....	Oct. 20		+ 6,66	50,96	20.12.27	1	105.14.52,75	10,96	
686	$\beta$ Capricorni.....	20		+ 6,68	40,16	20.12.42	1	105.14.41,95	10,97	
687	H. C. 39031.....	6		+ 4,33	27,08	20.12.44	1	113.56.29,03	10,97	
688	$\kappa$ Cephei.....	July. 21		+ 2,41	12,34	20.13.47	1	12.44.12,14	11,06	
689	$\kappa$ Cephei R.....	21		+ 2,41	9,69		1	12.44.10,66		
690	H. C. 39116.....	Aug. 27	7	+ 7,93	36,10	20.14.39	1	108.48.37,98	11,12	
691	H. C. 39125.....	Sept. 8	9	+ 8,14	32,33	20.14.51	2	106.15.34,14	11,13	
692	-----	Oct. 7	9	+ 6,98	32,29					
693	B.A.C. 7016.....	Sept. 25	7	+ 8,09	8,37	20.15.58	1	104.35.10,13	-11,21	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
694	B. (w.) xx. 419....	Sept. 16	9½	+ 8,46	61,54	20. 17. 15	2	104. 36. 1,67	- 11,31	
695	—	25	9	+ 8,12	58,28	20. 17. 15	2	104. 36. 1,67	- 11,31	
696	B. (w.) xx. 445....	Aug. 27	7	+ 8,93	28,64	20. 18. 2	2	104. 20. 34,75	11,36	
697	—	Sept. 17	8	+ 8,51	37,35	20. 18. 2	2	104. 20. 34,75	11,36	
698	H. C. 39350.....	Oct. 7	9	+ 5,44	15,49	20. 20. 24	1	111. 23. 17,41	11,53	
699	ρ Capricorni.....	1	8	+ 6,81	49,50	20. 20. 24	1	111. 23. 17,41	11,53	
700	—	6		+ 6,57	54,85	20. 20. 25	2	108. 17. 54,05	11,54	
701	B.A.C. 7044.....	6		+ 6,66	24,74	20. 20. 33	1	108. 21. 26,61	11,54	
702	B.A.C. 7049.....	20	7	+ 4,24	41,19	20. 20. 50	1	112. 52. 43,14	11,56	
703	B.A.C. 7069.....	Aug. 27	7¾	+ 7,64	0,16	20. 23. 33	1	112. 39. 2,10	11,75	
704	B.A.C. 7070.....	27	8	+ 7,62	26,12	20. 23. 36	1	112. 39. 28,06	11,76	
705	B. (w.) xx. 612. ...	Sept. 8	8½	+ 9,09	34,15	20. 23. 36	1	112. 39. 28,06	11,76	
706	—	17	7½	+ 8,86	32,50	20. 24. 36	3	104. 2. 34,50	11,83	
707	—	21		+ 8,70	31,66	20. 24. 36	3	104. 2. 34,50	11,83	
708	B. (w.) xx. 664. ...	Oct. 20	9.10	+ 7,25	39,84	20. 26. 29	1	104. 56. 41,62	11,96	
709	B.A.C. 7102.....	Sept. 8	8	+ 7,56	32,20	20. 26. 29	1	104. 56. 41,62	11,96	
710	—	16	8	+ 7,11	30,83	20. 27. 52	2	111. 5. 33,44	12,06	
711	H. C. 39688.....	8	9	+ 7,59	24,39	20. 27. 52	2	111. 5. 33,44	12,06	
712	—	16	9	+ 7,14	23,73	20. 28. 25	2	111. 4. 26,00	12,10	
713	B.A.C. 7128.....	17	7½	+ 6,32	37,43	20. 28. 25	2	111. 4. 26,00	12,10	
714	ν Capricorni.....	Oct. 20		+ 6,11	20,74	20. 31. 22	1	114. 18. 39,38	12,30	
715	H. C. 39981.....	Sept. 21		+ 7,50	13,45	20. 31. 37	1	108. 39. 22,61	12,32	
716	—	Oct. 20	8¼	+ 5,81	13,65	20. 31. 37	1	108. 39. 22,61	12,32	
717	α Cygni.....	Aug. 5		+ 8,68	44,24	20. 35. 27	2	109. 52. 15,45	12,59	
718	α Cygni R.....	5		+ 8,68	44,93	20. 35. 27	2	109. 52. 15,45	12,59	
719	ψ Capricorni.....	Sept. 16		+ 6,29	54,61	20. 36. 23	1	45. 14. 45,11	12,64	
720	B.A.C. 7202.....	2	8	+ 8,96	25,40	20. 36. 23	1	45. 14. 44,77	12,64	
721	—	17	7½	+ 8,23	25,37	20. 37. 20	1	115. 47. 56,57	12,71	
722	H. C. 40125.....	2	7	+ 8,96	32,14	20. 40. 0	2	108. 44. 27,26	12,89	
723	—	17	7	+ 8,24	32,09	20. 40. 0	2	108. 44. 27,26	12,89	
724	19 Capricorni.....	Oct. 20	7.8	+ 6,68	50,05	20. 40. 1	2	108. 44. 33,98	12,89	
725	B. (w.) xxi. 203...	Sept. 21		+ 9,66	24,69	20. 46. 26	1	108. 28. 51,92	13,32	
726	H. C. 40386.....	16	9	+ 8,50	27,94	20. 47. 12	1	103. 49. 26,41	13,36	
727	B. (w.) xx. 1305...	Oct. 20	10	+ 9,06	33,11	20. 47. 20	1	109. 8. 29,82	13,38	
728	H. C. 40684.....	Sept. 20	8	+ 8,40	38,06	20. 50. 57	1	102. 3. 34,70	13,61	
729	η Capricorni.....	Aug. 27		+ 9,61	11,54	20. 54. 20	1	109. 49. 39,96	13,83	
730	—	Sept. 16		+ 8,56	10,35	20. 54. 20	1	109. 49. 39,96	13,83	
731	—	Oct. 20		+ 6,32	11,88	20. 55. 59	3	110. 26. 13,17	13,93	
732	B. (w.) xxi. 15....	Sept. 20	10	+ 10,68	10,50	21. 1. 56	1	102. 7. 12,10	14,30	
733	ζ Cygni.....	21		+ 18,77	37,24	21. 1. 56	1	102. 7. 12,10	14,30	
734	ζ Cygni R.....	21		+ 18,77	40,23	21. 6. 38	1	60. 22. 39,03	14,59	
735	H. C. 41200.....	20	8	+ 9,95	8,05	21. 6. 38	1	60. 22. 39,18	14,59	
736	29 Capricorni.....	Aug. 26		+ 10,76	59,10	21. 6. 59	1	105. 44. 9,86	14,61	
737	—	27		+ 10,74	58,31	21. 6. 59	1	105. 44. 9,86	14,61	
738	—	Sept. 16		+ 10,17	58,20	21. 7. 33	3	105. 47. 0,35	14,64	
739	H. C. 41343.....	20	8	+ 10,79	57,78	21. 7. 33	3	105. 47. 0,35	14,64	
740	B. (w.) xxi. 252....	Aug. 31	7.8	+ 11,01	17,96	21. 10. 24	1	102. 52. 59,43	14,80	
741	—	Sept. 9	7	+ 10,82	18,80	21. 11. 41	2	104. 38. 20,14	14,88	
742	B. (w.) xxi. 357...	20	9	+ 11,36	40,50	21. 11. 41	2	104. 38. 20,14	14,88	
743	H. C. 41580.....	Aug. 31	8	+ 11,49	41,88	21. 15. 45	1	101. 19. 42,04	15,13	
744	B.A.C. 7456.....	Sept. 9	8½	+ 11,48	5,46	21. 16. 38	1	102. 24. 43,50	15,17	
745	—	20	7¾	+ 11,21	6,74	21. 16. 38	1	102. 24. 43,50	15,17	
746	B. (w.) xxi. 495...	Aug. 31	8¼	+ 11,62	18,16	21. 20. 3	2	102. 34. 7,73	15,36	
747	H. C. 41785.....	Oct. 18	9.10	+ 9,19	17,20	21. 21. 27	1	102. 43. 19,80	15,45	
748	B. (w.) xxi. 539...	Sept. 9	9½	+ 11,89	55,37	21. 22. 23	1	105. 4. 18,98	15,49	
749	β Aquarii.....	16		+ 12,67	9,33	21. 23. 29	1	100. 55. 56,88	15,56	
750	—	21		+ 12,68	8,23	21. 23. 29	1	100. 55. 56,88	15,56	
751	—	25		+ 12,68	9,28	21. 23. 46	3	96. 13. 10,08	15,58	
752	β Aquarii R.....	16		+ 12,67	11,23	21. 23. 46	3	96. 13. 10,08	15,58	
753	—	21		+ 12,68	8,99	21. 23. 46	3	96. 13. 10,08	15,58	
754	B.A.C. 7487.....	8	7½	+ 11,47	16,74	21. 26. 12	1	104. 8. 18,48	15,70	
755	B. (w.) xxi. 638...	Aug. 31	8½	+ 12,17	51,03	21. 26. 12	1	104. 8. 18,48	15,70	
756	B. (w.) xxi. 675....	Sept. 9	8	+ 12,25	16,98	21. 27. 4	1	99. 29. 52,43	15,75	
757	—	Oct. 18	8.9	+ 11,12	16,19	21. 28. 42	2	99. 42. 18,01	15,84	
758	B. (w.) xxi. 717...	Aug. 31	8	+ 11,93	23,04	21. 28. 42	2	99. 42. 18,01	15,84	
759	B. (w.) xxi. 774...	Sept. 8	9½	+ 11,56	53,25	21. 30. 16	1	102. 42. 24,68	15,93	
760	—	9	9	+ 11,55	52,14	21. 32. 31	2	105. 2. 54,48	16,04	
761	H. C. 42374.....	9	8½	+ 11,83	14,08	21. 32. 31	2	105. 2. 54,48	16,04	
762	δ Capricorni.....	24		+ 10,76	46,44	21. 37. 16	1	104. 21. 15,83	16,29	
763	B. (w.) xxi. 1023...	9	8	+ 12,57	39,95	21. 38. 52	1	106. 47. 48,28	16,37	
764	—	Oct. 18	8	+ 11,22	40,33	21. 43. 10	2	100. 43. 41,64	- 16,58	

No. 713. This star is H. C. 39816 and Argelander z. 234, No. 3. The R.A., which is from Argelander, is about 4" greater than that of B.A.C. The N.P.D. agrees with that of Argelander, but is about 30" less than the N.P.D. by B.A.C. and H. C.

Nos. 720—723. The preceding star is H. C. 40124, and the following star is Argelander z. 244, No. 93.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1852, as observed.	Approximate R.A. Jan. 1, 1852.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1852.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
765	μ Capricorni.....	Aug. 27		+12,32	43,16	21.45.13	2	104.14.45,05	-16,68	
766		28		+12,32	43,45					
767	B.A.C. 7639.....	Oct. 18	7 $\frac{3}{4}$	+8,92	49,24	21.48.37	1	108.35.51,11	16,85	
768	B. (w.) XXI. 1206..	18	10	+10,54	12,45	21.51.19	1	103.40.14,16	16,98	
769	ι Aquarii.....	Aug. 28		+12,75	6,04	21.58.26	1	104.35.7,80	17,30	
770	B. (w.) XXII. 119...	Oct. 11	9.10	+13,44	23,35					
771		12	9	+13,40	24,21	22.6.35	3	96.17.24,59	17,65	
772		18	8.9	+13,18	22,80					
773	B. (w.) XXII. 143 ..	Sept. 8		+13,47	44,01	22.7.45	1	99.7.45,38	17,70	No. 773. This is the star observed by mistake for Fortuna with the Transit on the same day. The apparent R.A. from the observation is 22 <sup>h</sup> .7 <sup>m</sup> .47 <sup>s</sup> .68, and the mean R.A. 1852, 0, 22 <sup>h</sup> .7 <sup>m</sup> .45 <sup>s</sup> .19.
774	B. (w.) XXII. 208 ..	Oct. 12	9.10	+11,75	52,04					
775		18	9.10	+11,38	50,72	22.10.42	3	102.49.53,18	17,81	No. 776. A faint star, obscured probably on this day somewhat by cloud.
776		19	10	+11,29	51,84					
777	B. (w.) XXII. 230 ..	11	8.9	+11,90	22,79	22.11.40	1	102.39.24,42	17,85	
778	B. (w.) XXII. 304..	18	8 $\frac{1}{4}$	+10,87	22,76	22.15.11	1	104.57.24,54	17,99	
779	B. (w.) XXII. 315..	12	9 $\frac{3}{4}$	+13,90	50,82	22.15.46	1	95.13.51,90	18,02	No. 779. Bessel's N.P.D. is 1' less. See the Circle observation of Nov. 1, 1850.
780	B. (w.) XXII. 343..	19	9	+11,15	53,85	22.16.39	1	103.55.55,57	18,05	
781	B. (w.) XXII. 415..	11	8.9	+12,04	34,87	22.19.34	1	103.1.36,53	18,16	
782	B. (w.) XXII. 417..	12	9 $\frac{1}{4}$	+13,59	50,39					
783		18	9.10	+13,34	47,48	22.19.38	2	96.46.50,11	18,16	
784	B. (w.) XXII. 420..	11	9	+12,02	17,84	22.19.48	1	103.2.19,50	18,17	
785	B. (w.) XXII. 444..	19	10	+11,54	59,55	22.20.55	1	102.59.1,21	18,21	No. 785. Bessel's Mag. is 9.
786	σ Aquarii.....	Aug. 28		+13,63	59,82	22.22.49	1	101.26.1,37	18,28	
787	B. (w.) XXII. 517..	Oct. 12	9	+13,13	26,04	22.24.40	1	99.2.27,40	18,34	
788	B. (w.) XXII. 519..	18	8	+13,32	38,63	22.24.47	1	97.13.39,84	18,35	
789	B. (w.) XXII. 548..	11	8	+14,06	47,57					
790		19	8.9	+13,73	46,01	22.26.13	2	95.38.47,89	18,40	
791	B. (w.) XXII. 617..	12	8	+12,38	45,82					
792		18	8	+11,97	43,60	22.29.15	2	102.29.46,34	18,50	No. 791 and 792. H. C. 44167 is the same star, its R.A. being 10° too small.
793	B. (w.) XXII. 672..	11	9	+13,03	17,20	22.31.40	2	100.21.17,94	18,58	
794		19	10	+12,57	15,74					
795	B. (w.) XXII. 694..	18	9	+13,40	11,63	22.32.33	1	97.34.12,87	18,61	No. 794. The sky on this night seems to have been in a state unfavourable for the estimation of magnitudes. See Nos. 776 and 785.
796	B. (w.) XXII. 708 ..	12	7.8	+12,36	3,96	22.33.35	1	103.0.5,62	18,65	
797	H. C. 44423.....	Nov. 16	7.8	+13,11	21,38	22.35.19	1	93.27.22,40	18,70	
798	B. (w.) XXII. 774..	Oct. 11	8.9	+13,27	47,16					
799		19	8.9	+12,84	47,88	22.36.27	2	99.47.48,95	18,74	
800	B. (w.) XXII. 776 ..	11	9 $\frac{1}{4}$	+13,27	14,55					
801		12	9 $\frac{1}{4}$	+13,23	13,77	22.36.29	2	99.50.15,59	18,74	
802	B. (w.) XXII. 797 ..	18	8	+11,85	53,82	22.37.36	1	103.46.55,54	18,77	
803	B. (w.) XXII. 881 ..	12	7.8	+12,80	48,91	22.41.38	1	102.7.50,51	18,89	
804	B. (w.) XXII. 912..	18	9	+13,24	1,10					
805		19		+13,18	4,67	22.43.31	2	99.5.4,26	18,95	
806	λ Aquarii.....	Aug. 28		+14,13	55,20	22.44.53	1	98.21.56,50	18,98	
807	B. (w.) XXII. 981 ..	Nov. 16	8.9	+11,00	41,79	22.47.11	1	100.9.43,25	19,05	
808	B. (w.) XXII. 1002..	Aug. 28		+14,20	29,72					
809		30		+14,28	28,37	22.48.0	2	98.36.30,37	19,07	
810	B. (w.) XXII. 1007..	Oct. 11	8	+13,09	8,68	22.48.19	1	101.51.10,25	19,08	
811	H. C. 44849.....	19	8.9	+11,90	31,94	22.48.21	1	104.20.33,69	19,08	
812	B.A.C. 7993.....	18	7 $\frac{1}{4}$	+14,23	56,76	22.49.37	1	95.35.57,86	19,12	
813	B. (w.) XXII. 1101..	11	9	+15,10	47,76					
814		12	9 $\frac{1}{4}$	+15,09	48,37	22.52.39	3	92.58.48,93	19,19	
815		19	9.10	+14,90	47,63					
816	B. (w.) XXII. 1110..	11	9	+15,10	24,62					
817		12	9 $\frac{1}{4}$	+15,09	24,25	22.52.59	2	93.0.25,45	19,20	
818	B. (w.) XXII. 1156..	Sept. 3	8	+14,52	34,02	22.54.47	1	102.3.35,61	19,25	
819	α Pegasi.....	Oct. 19		+18,77	22,23					
820		Nov. 18		+19,13	25,00	22.57.23	2	75.35.25,05	19,31	
821	α Pegasi R.....	18		+19,13	23,24		1	75.35.22,58		
822	B. (w.) XXII. 1237..	Oct. 12	9.10	+15,19	4,79	22.58.22	1	90.53.5,77	19,33	
823	φ Aquarii.....	Aug. 30		+14,55	43,36					
824		Sept. 25		+14,98	43,48	23.6.39	3	96.50.44,86	19,51	
825		Oct. 23		+13,98	44,21					
826	φ Aquarii R.....	Sept. 25		+14,98	45,98		1	96.50.45,54		
827	B. (w.) XXIII. 158..	3	9	+14,60	24,22	23.8.57	1	91.32.25,21	19,56	
828	ψ <sup>3</sup> Aquarii.....	Aug. 30		+14,79	5,25					
829		Sept. 25		+14,68	7,06	23.11.16	3	100.25.8,56	19,60	
830		Nov. 20		+10,96	8,92					
831	H. C. 46951.....	27	8	+14,97	44,31	23.49.51	1	87.48.45,28	20,03	
832	27 Piscium.....	Dec. 17		+11,31	36,80	23.51.6	2	94.22.40,22	20,04	
833		18		+11,24	41,53					
834	B. (w.) XXIII. 1216.	Oct. 18	8 $\frac{1}{4}$	+15,20	12,06	23.59.12	1	95.10.13,14	-20,05	





HORIZONTAL AND VERTICAL MEASURES  
OF THE  
DIAMETERS OF THE SUN AND MOON,  
COMPARED WITH TABULAR DIAMETERS:  
AND  
RIGHT ASCENSIONS AND NORTH POLAR DISTANCES  
OF THE SUN AND MOON,  
AND THE PLANETS FLORA, MELPOMENE, METIS, MASSILIA,  
LUTETIA, FORTUNA, THETIS, EGERIA, IRENE, THALIA,  
CALLIOPE, PSYCHE, HYGEIA AND NEPTUNE,  
CONCLUDED FROM  
OBSERVATIONS WITH THE TRANSIT AND MURAL CIRCLE,  
AND COMPARED  
WITH CALCULATED RIGHT ASCENSIONS AND NORTH POLAR DISTANCES.

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1852.

SIDEREAL INTERVALS occupied by TRANSITS of the SUN'S DIAMETER, and VERTICAL DIAMETERS of the SUN corrected for REFRACTION and PARALLAX; compared with the values in the NAUTICAL ALMANAC.

Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .	Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .
1852.	m. s.	s.	s.	" "	" "	" "	1852.	m. s.	s.	s.	" "	" "	" "
Jan. 3	2. 21,88	21,88	0,00	32. 34,81	34,60	-0,21	June 4	2. 17,84	17,78	-0,06	31. 34,96	33,60	-1,36
6	21,72	21,54	-0,18	33,13	34,60	+1,47	17	17,89	17,78	-0,11	29,12	31,10	+1,98
7	21,46	21,42	-0,04	36,85	34,40	-2,45	22	17,63	17,70	+0,07	32,38	30,60	-1,78
10				34,72	34,20	-0,52	24				30,71	30,40	-0,31
17	19,75	19,76	+0,01				25	17,38	17,40	+0,02	30,86	30,40	-0,46
19	19,45	19,36	-0,09				July 1	17,22	17,24	+0,02	28,63	30,20	+1,57
22	18,78	18,74	-0,04	33,15	32,40	-0,75	2	16,96	17,04	+0,08	32,31	30,20	-2,11
23	18,17	18,52	+0,35				3	16,74	16,84	-0,10	28,61	30,20	+1,59
28	17,48	17,42	-0,06	29,46	31,00	+1,54	5	16,96	16,74	-0,22	31,36	30,20	-1,16
29	17,24	17,18	-0,06	29,01	30,80	+1,79	6	16,91	16,84	-0,07			
Feb. 3	16,20	16,06	-0,14	30,24	29,20	-1,04	7	16,96	16,74	-0,22	27,43	30,20	+2,77
7	15,11	15,14	+0,03	26,03	28,00	+1,97	8	16,47	16,62	+0,15	33,86	30,20	-3,66
11	14,37	14,22	-0,15	27,68	26,40	-1,28	9	16,43	16,50	+0,07	30,53	30,40	-0,13
12	14,06	14,00	-0,06	24,87	26,20	+1,33	10	16,21	16,26	+0,05	31,07	30,40	-0,67
18	13,08	12,74	-0,34	24,30	23,60	-0,70	12	16,03	16,12	+0,09	29,72	30,60	+0,88
20	12,48	12,34	-0,14	23,72	22,80	-0,92	13	15,77	15,84	+0,07	33,60	30,60	-3,00
21	12,26	12,14	-0,12	22,70	22,40	-0,30	15	15,45	15,70	+0,25			
24	11,69	11,60	-0,09	20,66	21,00	+0,34	16	15,00	14,94	-0,06	31,51	31,00	-0,51
27				21,64	19,60	-2,04	21	14,78	14,78	0,00	32,83	31,60	-1,23
Mar. 3	10,40	10,36	-0,04	15,74	17,20	+1,46	22	14,36	14,62	+0,26	31,16	31,80	+0,64
4	10,25	10,22	-0,03	17,15	16,60	-0,55	23	14,32	14,46	+0,14	34,06	32,00	-2,06
5	10,17	10,10	-0,07	14,15	16,20	+2,05	24	14,00	14,12	+0,12	32,30	32,20	-0,10
6				17,98	15,60	-2,38	26	13,88	13,94	+0,06	32,63	32,80	+0,17
10	9,76	9,54	-0,22	16,11	13,60	-2,51	27	13,79	13,78	-0,01	32,51	33,00	+0,49
12	9,38	9,36	-0,02	9,59	12,40	+2,81	28	13,61	13,44	-0,17	34,41	33,20	-1,21
15	9,29	9,12	-0,17	12,52	10,80	-1,72	30	13,11	12,92	-0,19	30,56	33,60	+3,04
19	8,98	8,90	-0,08	7,56	8,60	+1,04	Aug. 2	12,60	12,58	-0,02	37,25	34,40	-2,85
20	8,85	8,86	+0,01				4	11,21	11,22	+0,01	33,06	35,00	+1,94
22	8,73	8,80	+0,07	10,20	7,00	-3,20	12	10,98	11,06	+0,08	36,15	37,40	+1,25
23	8,75	8,78	+0,03				13	10,91	10,90	-0,01	37,33	37,80	+0,47
25				9,69	5,40	-4,29	14	10,39	10,44	+0,05	37,35	38,00	+0,65
29	8,78	8,78	0,00	3,35	3,20	-0,15	17	10,25	10,30	+0,05	37,80	39,20	+1,40
Apr. 1	9,14	8,86	-0,28	32. 1,59	1,60	+0,01	18	9,14	9,14	0,00	37,60	39,60	+2,00
3	9,27	8,94	-0,33	31. 59,93	60,40	+0,47	27	9,05	9,04	-0,01	44,34	43,40	-0,94
8	9,26	9,24	-0,02	60,92	57,60	-3,32	28	8,80	8,84	+0,04	45,59	43,80	-1,79
10	9,36	9,40	+0,04	60,47	56,60	-3,87	30	8,68	8,74	+0,06	46,15	44,80	-1,35
12				56,11	55,40	-0,71	31	8,59	8,66	+0,07	44,47	45,20	+0,73
13	9,74	9,66	-0,08	56,98	55,00	-1,98	Sept. 1	8,64	8,58	-0,06	46,42	45,60	-0,82
14	9,80	9,76	-0,04	56,31	54,40	-1,91	2	8,42	8,50	+0,08	44,77	46,20	+1,43
15	9,90	9,86	-0,04	59,08	53,80	-5,28	3	7,88	8,00	+0,12	46,83	46,60	-0,23
17	9,95	10,08	+0,13	52,51	52,80	+0,29	14	7,98	7,98	-0,00			
20	10,30	10,44	+0,14	51,75	51,20	-0,55	17	7,97	8,06	+0,09	55,67	53,60	-2,07
21	10,47	10,56	+0,09	51,55	50,60	-0,95	22	8,08	8,14	+0,06	56,17	56,40	+0,23
22	10,74	10,70	-0,04	50,42	50,20	-0,22	24	8,53	8,54	+0,01	31. 58,16	57,40	-0,76
23	10,97	10,84	-0,13	48,78	49,80	+1,02	30	8,77	8,62	-0,15	32. 0,03	0,80	+0,77
24	10,98	10,98	0,00	52,02	49,20	-2,82	Oct. 1	8,74	9,14	+0,40	1,51	1,40	-0,11
26	11,69	11,26	-0,43	47,42	48,20	+0,78	6	9,33	9,26	-0,07	3,61	4,00	+0,39
May 1	12,11	12,02	-0,09				7	9,89	9,80	-0,09			
3	12,26	12,34	+0,08	45,96	45,00	-0,96	11	10,02	9,96	-0,06	8,19	6,80	-1,39
4	12,49	12,50	+0,01				12	9,93	10,12	+0,19			
7	13,43	12,98	(-0,45)	45,42	43,20	-2,22	13				7,09	8,00	+0,91
15	14,40	14,30	-0,10	40,60	39,80	-0,80	18				10,29	10,60	+0,31
18	14,80	14,78	-0,02	39,91	38,60	-1,31	19	11,16	11,14	-0,02	10,43	11,20	+0,77
19	14,96	14,94	-0,02	41,17	38,20	-2,97	20	11,28	11,32	+0,04			
24	15,79	15,78	-0,01	37,46	36,60	-0,86	23	11,87	11,92	+0,05	13,25	13,40	+0,15
June 1	2. 16,71	16,70	-0,01	31. 34,04	34,20	+0,16	Nov. 4	2. 14,56	14,56	0,00	32. 18,86	19,40	+0,54



Day of Observation.	Interval by Obser- vation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .	Day of Observation.	Interval by Obser- vation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .
1852.	m. s.	s.	s.	" "	" "	" "	1852.	m. s.	s.	s.	" "	" "	" "
Nov. 6	2. 15,12	15,04	- 0,08	32. 21,66	20,40	- 1,26	Dec. 14				32. 34,50	33,20	- 1,30
8	15,40	15,52	+ 0,12	20,26	21,20	+ 0,94	15	2. 22,24	22,22	- 0,02	31,09	33,20	+ 2,11
10	16,02	15,98	- 0,04	22,01	22,20	+ 0,19	16	22,20	22,28	+ 0,08	35,02	33,40	- 1,62
15	17,14	17,18	+ 0,04	23,72	24,40	+ 0,68	17	22,25	22,34	+ 0,09	30,73	33,60	+ 2,87
17	17,57	17,66	+ 0,09	23,87	25,20	+ 1,33	18	22,35	22,38	+ 0,03	33,88	33,80	- 0,08
18	17,70	17,88	+ 0,18				21	22,29	22,46	+ 0,17	31,34	34,20	+ 2,86
19	18,09	18,12	+ 0,03	26,72	26,00	- 0,72	23	22,36	22,46	+ 0,10	33,88	34,40	+ 0,52
25	19,37	19,40	+ 0,03	28,19	28,20	+ 0,01	28	22,31	22,28	- 0,03	33,28	34,60	+ 1,32
27	19,93	19,80	- 0,13	30,18	29,00	- 1,18	30	22,11	22,16	+ 0,05			
Dec. 2	20,87	20,70	- 0,17	28,53	30,40	+ 1,87	31	2. 21,91	22,08	+ 0,17	32. 33,96	34,60	+ 0,64
6	2. 21,27	21,32	+ 0,05	32. 30,80	31,40	+ 0,60							

SIDEREAL INTERVALS occupied by TRANSITS of the MOON'S DIAMETER; compared with the values in the NAUTICAL ALMANAC.

Day of Observation.	Apparent Interval by Obser- vation.	Correction for Defect of Illumi- nation.	Tabular Interval.	Excess of Tabular Interval.	Calc <sup>u</sup> ld. Excess of Tabular Diam <sup>r</sup> .
1852.	m. s.	s.	m. s.	s.	"
Mar. 5	2. 21,41	+ 0,02	2. 21,60	+ 0,17	+ 2,40
May 3	2. 21,94	+ 0,05	2. 22,01	+ 0,02	+ 0,28
July 30	2. 17,96	0,00	2. 18,12	+ 0,16	+ 2,15

Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		m. s.	h. m. s.	s.	s.		"	"	° ' "	"	"
Jan.	3.	0.	4.11,1			18.53.40,02	39,66	-0,36		8,41		112.53.4,93	4,19	-0,74
	6.	0.	5.32,8			19.6.51,57	51,09	-0,48		8,39		112.34.4,58	5,01	+0,43
	7.	0.	5.59,0			19.11.14,40	14,01	-0,39		8,39		112.26.50,17	51,52	+1,35
	10.	0.	7.14,5							8,37		112.2.31,98	32,74	+0,76
	17.	0.	9.51,5			19.54.33,16	33,01	-0,15	S.	8,33	16.16,60	110.50.54,35	57,69	+3,34
	19.	0.	10.30,5			20.3.5,32	5,16	-0,16						
	22.	0.	11.23,5			20.15.48,16	47,87	-0,29		8,26		109.47.47,75	49,62	+1,87
	23.	0.	11.39,4			20.20.0,66	0,57	-0,09						
	28.	0.	12.48,0			20.40.52,25	51,93	-0,32		8,18		108.19.55,30	59,85	+4,55
	29.	0.	12.59,3			20.44.60,08	59,72	-0,36		8,17		108.4.9,59	10,06	+0,47
Feb.	3.	0.	13.42,6			21.5.26,36	26,01	-0,35		8,10		106.40.18,28	18,98	+0,70
	7.	0.	14.2,4			21.21.32,45	32,08	-0,37		8,01		105.27.57,18	59,60	+2,42
	11.	0.	14.9,4			21.37.25,63	25,39	-0,24		7,94		104.11.28,31	28,31	0,00
	12.	0.	14.9,2			21.41.21,99	21,80	-0,19		7,91		103.51.43,24	44,12	+0,88
	18.	0.	13.52,8			22.4.44,89	44,85	-0,04		7,77		101.48.46,16	45,43	-0,73
	20.	0.	13.42,0			22.12.27,12	26,90	-0,22		7,72		101.6.13,09	11,54	-1,55
	21.	0.	13.35,4			22.16.17,07	16,91	-0,16		7,69		100.44.38,50	38,94	+0,44
	24.	0.	13.11,9			22.27.43,16	43,03	-0,13		7,61		99.39.1,73	2,95	+1,22
	25.	0.	13.2,9	I.	1.5,71	22.31.30,68	30,48	-0,20	N.	7,56	16.10,30	99.16.54,33	53,15	-1,18
	27.	0.	12.42,6	II.	1.5,55	22.39.3,43	3,55	+0,12		7,52		98.32.8,36	9,16	+0,80
Mar.	3.	0.	11.43,4			22.57.46,84	46,51	-0,33		7,36		96.38.16,21	16,46	+0,25
	4.	0.	11.29,5			23.1.29,50	29,60	+0,10		7,34		96.15.12,42	12,07	-0,35
	5.	0.	11.15,4			23.5.11,92	12,23	+0,31		7,30		95.52.0,83	2,57	+1,74
	6.	0.	11.1,4	II.	1.4,99	23.8.54,41	54,44	+0,03		7,27		95.28.49,97	48,27	-1,70
	10.	0.	10.0,3			23.23.39,38	39,45	+0,07		7,14		93.55.12,05	11,37	-0,68
	12.	0.	9.27,7			23.30.59,81	60,00	+0,19		7,07		93.8.4,33	4,07	-0,26
	15.	0.	8.37,6			23.41.59,17	58,85	-0,32		6,96		91.57.5,07	7,37	+2,30
	19.	0.	7.26,9			23.56.34,49	34,45	-0,04		6,76		90.22.18,57	18,37	-0,20
	20.	0.	7.8,7			0.0.12,85	12,96	+0,11	S.	6,79	16.4,00	89.58.36,41	36,17	-0,24
	22.	0.	6.32,4			0.7.29,54	29,63	+0,09		6,74		89.11.15,41	14,57	-0,84
	23.	0.	6.14,2			0.11.7,78	7,81	+0,03	N.	6,63	16.3,20	88.47.34,91	35,97	+1,06
	25.	0.	5.37,3	II.	1.4,38	0.18.23,96	23,99	+0,03		6,58		88.0.26,32	24,87	-1,45
	29.	0.	4.23,2			0.32.55,86	56,05	+0,19		6,42		86.26.38,17	37,97	-0,20
April	1.	0.	3.28,7			0.43.50,79	50,46	-0,33		6,30		85.16.60,42	59,96	-0,46
	3.	0.	2.52,0			0.51.7,12	7,22	+0,10		6,21		84.30.58,50	59,86	+1,36
	8.	0.	1.24,6			1.9.22,22	22,17	-0,05		6,01		82.37.47,37	46,35	-1,02
	10.	0.	0.51,3			1.16.41,94	41,82	-0,12		5,92		81.53.18,46	18,35	-0,11
	12.	0.	0.18,8	II.	1.4,79	1.24.2,65	2,65	0,00		5,84		81.9.20,94	22,54	+1,60
	13.	0.	0.3,4			1.27.43,62	43,56	-0,06		5,80		80.47.36,20	37,54	+1,34
	13.	23.59.48,2				1.31.24,89	24,81	-0,08		5,76		80.25.59,01	61,54	+2,53
	14.	23.59.33,4				1.35.6,63	6,43	-0,20		5,73		80.4.33,31	34,84	+1,53
	16.	23.59.4,5		II.	1.5,04	1.42.30,72	30,79	+0,07		5,63		79.22.9,05	11,03	+1,98
	19.	23.58.24,4				1.53.40,20	40,31	+0,11		5,51		78.19.54,54	54,32	-0,22
	20.	23.58.12,2				1.57.24,54	24,33	-0,21		5,47		77.59.30,74	31,22	+0,48
	21.	23.58.0,0				2.1.8,81	8,78	-0,03		5,43		77.39.18,28	19,92	+1,64
	22.	23.57.48,5				2.4.53,84	53,67	-0,17		5,40		77.19.18,95	20,91	+1,96
	23.	23.57.37,1				2.8.39,01	39,02	+0,01		5,35		76.59.35,38	34,41	-0,97
	25.	23.57.16,1				2.16.11,04	11,10	+0,06		5,28		76.20.40,34	40,30	-0,04
	30.	23.56.32,5				2.35.10,06	9,93	-0,13	S.	5,12	15.52,90	74.47.26,18	27,38	+1,20
May	2.	23.56.18,4				2.42.49,05	49,12	+0,07		5,02		74.11.56,08	53,77	-2,31
	3.	23.56.12,3				2.46.39,53	39,54	+0,01	S.	5,01	15.52,30	73.54.30,32	30,27	-0,05
	6.	23.55.56,8				2.58.13,61	14,21	(+0,60)		4,88		73.3.56,27	56,76	+0,49
	14.	23.55.43,6				3.29.32,80	32,57	-0,23		4,61		71.1.46,97	48,42	+1,45
	17.	23.55.47,7				3.41.26,66	26,65	-0,01		4,53		70.21.8,00	7,90	-0,10
	18.	23.55.50,3				3.45.25,81	25,81	0,00		4,50		70.8.13,01	13,90	+0,89
	23.	23.56.11,2								4,38		69.8.53,67	53,47	-0,20
	31.	23.57.9,5				4.38.0,48	0,39	-0,09		4,20		67.52.46,12	47,22	+1,10
June	3.	23.57.38,3		II.	1.8,51	4.50.18,97	18,75	-0,22		4,16		67.30.30,34	31,20	+0,86
	17.	0.0.12,3				5.44.8,70	8,58	-0,12		4,04		66.35.32,23	31,32	-0,91
	22.	0.1.17,6				6.4.56,95	56,76	-0,19		4,02		66.32.49,32	47,99	-1,33
	24.	0.1.43,4		II.	1.8,87	6.13.15,90	15,71	-0,19		4,03		66.34.37,16	36,38	-0,78
	25.	0.1.56,2				6.17.25,36	25,01	-0,35		4,04		66.36.8,48	7,77	-0,71
July	1.	0.3.8,5				6.42.17,18	17,03	-0,15		4,08		66.53.52,33	52,53	+0,20
	2.	0.3.19,8		I.	1.8,66	6.46.25,10	24,89	-0,21		4,09		66.58.15,76	15,32	-0,44
	3.	0.3.30,6				6.50.32,42	32,47	+0,05		4,10		67.3.2,11	2,12	+0,01
	5.	0.3.51,7				6.58.46,67	46,72	+0,05		4,12		67.13.46,96	47,71	+0,75
	6.	0.4.2,2				7.2.53,80	53,37	-0,43	S.	4,16	15.45,10	67.19.43,90	46,10	+2,20

May 7. Probably the time of Transit of 1 L. was 1<sup>s</sup> in defect.



Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semi- diameter.	Geocentric N.P.D. of Centre from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.	
d.	h.	m.	s.		m.	s.	h.	m.	s.	s.	s.		"	"	°	'	"	"	"
July	7.	0.	4.11,5				7.	6.	59,68	59,67	-0,01		4,15		67.	26.	9,19	8,09	-1,10
	8.	0.	4.21,0				7.	11.	5,78	5,61	-0,17		4,16		67.	32.	53,12	53,49	+0,37
	9.	0.	4.29,9				7.	15.	11,26	11,18	-0,08		4,17		67.	40.	2,81	2,08	-0,73
	10.	0.	4.38,5				7.	19.	16,37	16,36	-0,01		4,19		67.	47.	34,03	33,88	-0,15
	12.	0.	4.54,3				7.	27.	25,35	25,46	+0,11		4,23		68.	3.	47,10	46,26	-0,84
	13.	0.	5.1,6				7.	31.	29,26	29,35	+0,09		4,24		68.	12.	25,75	26,36	+0,61
	15.	0.	5.14,9				7.	39.	35,75	35,71	-0,04	S.	4,31	15.45,40	68.	30.	54,92	53,55	-1,37
	16.	0.	5.20,8				7.	43.	38,16	38,15	-0,01		4,31		68.	40.	39,72	40,24	+0,52
	21.	0.	5.42,2				8.	3.	42,38	42,33	-0,05		4,42		69.	34.	57,08	55,31	-1,77
	22.	0.	5.44,8				8.	7.	41,61	41,46	-0,15		4,44		69.	46.	50,16	49,01	-1,15
	23.	0.	5.46,2				8.	11.	39,58	39,99	(+0,41)		4,47		69.	59.	3,97	2,90	-1,07
	24.	0.	5.48,2				8.	15.	38,11	37,93	-0,18		4,49		70.	11.	36,91	36,90	-0,01
	26.	0.	5.49,1				8.	23.	32,12	31,97	-0,15		4,55		70.	37.	44,54	43,69	-0,85
	27.	0.	5.48,3				8.	27.	27,92	28,07	+0,15		4,58		70.	51.	17,81	16,08	-1,73
	28.	0.	5.47,3				8.	31.	23,44	23,56	+0,12		4,61		71.	5.	10,18	7,38	-2,80
	30.	0.	5.43,3				8.	39.	12,54	12,70	+0,16		4,67		71.	33.	45,66	45,77	+0,11
Aug.	2.	0.	5.32,8				8.	50.	51,67	51,85	+0,18		4,76		72.	18.	59,69	58,45	-1,24
	4.	0.	5.23,0				8.	58.	34,95	34,98	+0,03		4,83		72.	50.	35,11	33,74	-1,37
	9.	0.	4.48,1	II.	1.5,86		9.	17.	42,77	42,65	-0,12								
	12.	0.	4.20,2				9.	29.	4,46	4,52	+0,06		5,11		75.	7.	41,98	40,41	-1,57
	13.	0.	4.9,8				9.	32.	50,58	50,71	+0,13		5,14		75.	25.	56,84	56,41	-0,43
	14.	0.	3.58,9				9.	36.	36,14	36,37	+0,23		5,18		75.	44.	27,30	26,50	-0,80
	17.	0.	3.23,6				9.	47.	50,43	50,18	-0,25		5,29		76.	41.	19,75	17,29	-2,46
	18.	0.	3.10,4				9.	51.	33,79	33,74	-0,05		5,33		77.	0.	41,83	40,09	-1,74
	27.	0.	0.52,3				10.	24.	44,27	44,31	+0,04		5,68		80.	3.	41,64	40,77	-0,87
	28.	0.	0.34,8				10.	28.	23,30	23,36	+0,06		5,72		80.	24.	53,33	52,16	-1,17
	29.	23.	59.58,8				10.	35.	40,24	40,38	+0,14		5,80		81.	7.	43,25	42,06	-1,19
	30.	23.	59.40,3				10.	39.	18,32	18,41	+0,09		5,84		81.	29.	20,66	19,96	-0,70
	31.	23.	59.21,6				10.	42.	56,13	56,14	+0,01		5,88		81.	51.	6,87	6,05	-0,82
Sept.	1.	23.	59.2,6				10.	46.	33,56	33,58	+0,02		5,93		82.	13.	0,10	0,05	-0,05
	2.	23.	58.43,3				10.	50.	10,77	10,77	0,00		5,97		82.	35.	1,97	1,65	-0,32
	9.	23.	56.22,4									S.	6,27	15.55,00	85.	12.	21,36	19,94	-1,42
	13.	23.	54.59,1				11.	29.	48,10	48,00	-0,10	S.	6,43	15.56,00	86.	44.	11,46	11,43	-0,03
	15.	23.	54.17,0									N.	6,46	15.56,50	87.	30.	30,94	30,43	-0,51
	16.	23.	53.56,0				11.	40.	34,46	34,37	-0,09		6,53		87.	53.	45,55	44,53	-1,02
	19.	23.	52.53,0	II.	1.4,01		11.	51.	20,94	20,73	-0,21	N.	6,61	15.57,60	89.	3.	41,96	40,93	-1,03
	21.	23.	52.11,2				11.	58.	32,11	31,88	-0,23		6,72		89.	50.	27,03	26,63	-0,40
	23.	23.	51.29,7				12.	5.	43,64	43,43	-0,21		6,79		90.	37.	15,20	15,63	+0,43
	29.	23.	49.29,4				12.	27.	22,29	22,23	-0,06		7,01		92.	57.	36,92	35,53	-1,39
	30.	23.	49.10,2				12.	30.	59,63	59,56	-0,07		7,04		93.	20.	55,02	54,33	-0,69
Oct.	1.	23.	48.51,2	I.	1.4,36		12.	34.	36,95	37,20	+0,25								
	5.	23.	47.39,5				12.	49.	11,41	11,29	-0,12		7,21		95.	16.	49,65	49,54	-0,11
	6.	23.	47.22,2				12.	52.	50,61	50,81	+0,20	S.	7,27	16.2,30	95.	39.	51,83	50,34	-1,49
	8.	23.	46.49,7	II.	1.4,76		13.	0.	11,09	11,17	+0,08	S.	7,33	16.2,80	96.	25.	40,03	38,94	-1,09
	10.	23.	46.19,3				13.	7.	33,73	33,42	-0,31		7,37		97.	11.	7,91	7,44	-0,47
	11.	23.	46.4,4				13.	11.	15,37	15,29	-0,08	N.	7,38	16.3,70	97.	33.	43,11	43,14	+0,03
	12.	23.	45.49,9				13.	14.	57,36	57,68	+0,32		7,43		97.	56.	15,04	12,75	-2,29
	17.	23.	44.47,6	II.	1.5,48		13.	33.	37,67	37,89	+0,22		7,58		99.	46.	52,98	53,56	+0,58
	18.	23.	44.37,1				13.	37.	23,70	23,69	-0,01		7,61		100.	8.	37,15	37,46	+0,31
	19.	23.	44.26,7				13.	41.	9,81	10,11	+0,30	N.	7,62	16.5,90	100.	30.	12,99	12,26	-0,73
	22.	23.	44.0,6				13.	52.	33,28	33,23	-0,05		7,71		101.	33.	58,20	58,57	+0,37
	29.	23.	43.23,7	II.	1.6,71		14.	19.	32,17	31,92	-0,25								
Nov.	3.	23.	43.20,4				14.	39.	11,63	11,61	-0,02		7,99		105.	31.	25,89	24,51	-1,38
	5.	23.	43.25,2				14.	47.	9,56	9,36	-0,20		8,02		106.	7.	44,80	43,42	-1,38
	7.	23.	43.33,0				14.	55.	10,49	10,54	+0,05		8,06		106.	42.	57,87	57,93	+0,06
	9.	23.	43.44,5				15.	3.	15,18	15,16	-0,02		8,10		107.	17.	5,54	4,84	-0,70
	14.	23.	44.28,2				15.	23.	41,73	41,63	-0,10		8,17		108.	37.	6,31	3,36	-2,95
	15.	23.	44.59,4	I.	1.8,71		15.	27.	49,53	49,45	-0,08								
	16.	23.	44.51,4				15.	31.	58,15	58,09	-0,06		8,20		109.	6.	48,41	46,77	-1,64
	17.	23.	45.4,2				15.	36.	7,53	7,55	+0,02	S.	8,22	16.12,80	109.	21.	8,69	7,68	-1,01
	18.	23.	45.18,0				15.	40.	17,93	17,81	-0,12		8,23		109.	35.	9,55	7,48	-2,07
	24.	23.	46.56,6				16.	5.	36,17	35,88	-0,29		8,30		110.	51.	27,50	24,92	-2,58
	26.	23.	47.35,4				16.	14.	8,11	7,95	-0,16		8,31		111.	13.	47,09	46,73	-0,36
	30.	23.	49.1,5	I.	1.10,27		16.	31.	20,73	20,57	-0,16	N.	8,34	16.15,10	111.	53.	40,16	39,56	-0,60
Dec.	1.	23.	49.24,6				16.	35.	40,44	40,40	-0,04		8,36		112.	2.	35,42	35,46	+0,04
	5.	23.	51.3,7				16.	53.	6,01	5,80	-0,21		8,38		112.	34.	1,58	1,89	+0,31

July 23. Very bad circumstances: see the transit observation.

Oct. 13. No accompanying clock stars.



Greenwich Mean Solar Time of Transit of Centre.	Limb Observed.	Reduction to Transit of Centre.	R. A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semi- diameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		m. s.	h. m. s.	s.	s.		"	" "	° ' "	" "	" "
Dec. 8. 23. 52. 23,6	I.	1. 10,85	17. 6. 15,87	15,51	- 0,36						
10. 23. 53. 19,1	II.	1. 10,95	17. 15. 4,62	4,21	- 0,41						
13. 23. 54. 44,8	II.	1. 11,08	17. 28. 20,17	19,93	- 0,24		8,42		113. 15. 30,85	31,65	+ 0,80
14. 23. 55. 14,0			17. 32. 46,01	45,73	- 0,28		8,42		113. 18. 40,08	38,86	- 1,22
15. 23. 55. 43,4			17. 37. 12,09	11,75	- 0,34		8,42		113. 21. 21,00	17,97	- 3,03
16. 23. 56. 12,9			17. 41. 38,25	37,95	- 0,30		8,42		113. 23. 28,65	28,97	+ 0,32
17. 23. 56. 42,7			17. 46. 4,66	4,31	- 0,35		8,43		113. 25. 12,45	11,78	- 0,67
20. 23. 58. 12,4			17. 59. 24,31	23,93	- 0,38		8,43		113. 27. 31,00	30,60	- 0,40
22. 23. 59. 12,3			18. 8. 17,46	17,15	- 0,31		8,43		113. 26. 41,72	41,42	- 0,30
28. 0. 1. 40,7			18. 30. 29,11	28,80	- 0,31		8,42		113. 16. 24,17	23,95	- 0,22
30. 0. 2. 38,9			18. 39. 20,50	20,29	- 0,21	S.	8,43	16. 17,30	113. 9. 0,78	0,47	- 0,31
31. 0. 3. 7,5			18. 43. 45,72	45,67	- 0,05		8,42		113. 4. 38,44	36,98	- 1,46

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THE MOON.

Greenwich Mean Solar Time of Transit of Centre.	Limb Observed.	Reduction to Transit of Centre.	R. A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semi- diameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		m. s.	h. m. s.	s.	s.		" "	" "	° ' "	" "	" "
Jan. 8. 9. 8. 34,7	I.	1. 6,41	3. 59. 33,01	33,34	+ 0,33	S.	33. 3,14	15. 20,21	73. 18. 35,75	34,18	- 1,57
7. 12. 49. 42,9	II.	1. 12,30	7. 57. 3,84	4,80	+ 0,96						
29. 6. 13. 28,7						S.	36. 27,16	14. 58,59	78. 53. 4,56	58,27	- 6,29
30. 6. 58. 33,6	I.	1. 4,92	3. 35. 37,64	37,99	+ 0,35	S.	33. 52,83	15. 8,36	74. 55. 27,15	19,41	- 7,74
31. 7. 46. 46,5	I.	1. 7,13	4. 27. 54,95	55,56	+ 0,61	S.	31. 39,52	15. 20,71	71. 33. 57,36	52,62	- 4,74
Feb. 2. 9. 33. 58,5	I.	1. 11,35	6. 23. 17,69	18,52	+ 0,83	N.	28. 53,31	15. 49,93	67. 42. 55,11	48,26	- 6,85
3. 10. 32. 3,3	I.	1. 12,53	7. 25. 28,66	29,63	+ 0,97	N.	29. 22,35	16. 4,63	67. 45. 11,79	8,55	- 3,24
4. 11. 31. 22,4	I.	1. 12,72	8. 28. 54,00	54,95	+ 0,95	N.	31. 11,14	16. 17,36	69. 19. 27,62	26,28	- 1,34
5. 12. 30. 15,6	II.	1. 12,00	9. 31. 53,40	54,51	+ 1,11	N.	34. 13,02	16. 26,76	72. 23. 15,66	16,95	+ 1,29
6. 13. 27. 28,5	II.	1. 10,79	10. 33. 12,30	13,57	+ 1,27	S.	38. 32,97	16. 31,85	76. 42. 51,39	53,91	+ 2,52
27. 5. 38. 13,1	I.	1. 5,49	4. 5. 27,48	27,81	+ 0,33	S.	32. 2,65	15. 5,66	72. 42. 29,89	26,77	- 3,12
28. 6. 27. 9,9	I.	1. 7,64	4. 58. 28,84	29,35	+ 0,51	S.	30. 10,01	15. 17,76	69. 52. 56,45	50,26	- 6,19
Mar. 2. 9. 12. 25,7	I.	1. 12,28	7. 56. 1,44	2,10	+ 0,66	N.	29. 47,49	16. 4,78	68. 12. 50,42	47,93	- 2,49
3. 10. 10. 55,9	I.	1. 12,34	8. 58. 37,76	38,52	+ 0,76	N.	32. 21,20	16. 20,30	70. 31. 26,67	24,61	- 2,06
4. 11. 9. 2,6	I.	1. 11,73	10. 0. 50,56	51,31	+ 0,75	N.	36. 3,78	16. 32,98	74. 15. 38,03	35,85	- 2,18
5. 12. 5. 53,7	II.	1. 10,80	11. 1. 47,73	48,52	+ 0,79	N.	40. 28,39	16. 41,24	79. 10. 4,91	5,01	+ 0,10
6. 13. 1. 16,0	II.	1. 9,95	12. 1. 15,56	16,49	+ 0,93	N.	44. 58,44	16. 44,02	84. 51. 33,24	37,97	+ 4,73
30. 7. 55. 22,4	I.	1. 11,38	8. 29. 8,94	9,94	+ 1,00	N.	30. 21,57	15. 59,45	69. 2. 25,51	21,30	- 4,21
April 1. 9. 48. 1,5	I.	1. 10,73	10. 29. 59,66	60,43	+ 0,77	N.	37. 42,81	16. 29,82	76. 21. 7,83	2,09	- 5,74
2. 10. 43. 18,7	I.	1. 10,19	11. 29. 22,49	23,17	+ 0,68	N.	42. 25,52	16. 40,66	81. 40. 11,24	9,58	- 1,66
3. 11. 37. 57,9	I.	1. 9,90	12. 28. 7,25	7,86	+ 0,61	N.	47. 4,02	16. 46,53	87. 38. 1,76	0,08	- 1,68
13. 20. 36. 54,9	II.	1. 4,04	22. 7. 58,34	58,12	- 0,22	N.	50. 34,06	14. 55,21	105. 26. 36,95	53,98	(+17,03)
24. 3. 59. 19,3	I.	1. 8,89	6. 11. 0,88	1,19	+ 0,31	N.	27. 27,28	15. 16,71	67. 13. 46,11	34,45	- 11,66
26. 5. 47. 18,5	I.	1. 10,36	8. 7. 10,93	11,47	+ 0,54						
27. 6. 42. 3,6	I.	1. 10,25	9. 6. 1,58	2,31	+ 0,73	N.	31. 25,44	15. 54,06	70. 27. 28,39	24,08	- 4,31
May 1. 10. 16. 1,4	I.	1. 9,29	12. 56. 20,78	21,40	+ 0,62	N.	48. 40,25	16. 39,51	90. 32. 8,89	7,99	- 0,90
3. 12. 5. 15,5	I.	1. 11,00	14. 53. 45,88	46,59	+ 0,71	N.	55. 6,13	16. 38,88	102. 16. 24,84	24,68	- 0,16
4. 13. 2. 20,1	II.	1. 12,06	15. 54. 56,47	57,33	+ 0,86	S.	56. 48,24	16. 30,65	107. 3. 51,87	51,80	- 0,07
31. 10. 45. 31,2	I.	1. 11,02	15. 24. 12,09	12,30	+ 0,21	N.	55. 36,62	16. 28,65	104. 47. 31,95	34,87	+ 2,92
June 23. 5. 12. 9,9	I.	1. 7,68	11. 20. 36,89	37,65	+ 0,76	N.	39. 54,69	16. 4,42	80. 23. 15,11	15,12	+ 0,01
26. 7. 42. 55,0	I.	1. 8,16	14. 3. 36,39	36,70	+ 0,31						
29. 10. 26. 58,2	I.	1. 12,11	16. 59. 56,25	56,50	+ 0,25	N.	56. 35,69	16. 9,54	110. 44. 55,34	59,67	+ 4,33
30. 11. 25. 30,9	I.	1. 12,59	18. 2. 35,03	35,31	+ 0,22	N.	56. 42,19	16. 1,86	112. 46. 44,50	51,10	+ 6,60
July 20. 3. 8. 35,1	I.	1. 8,41	11. 3. 8,77	10,22	+ 1,45	N.	38. 51,03	16. 8,90	78. 46. 39,93	44,42	+ 4,49
22. 4. 49. 54,7	I.	1. 7,29	12. 52. 38,15	38,83	+ 0,68	N.	47. 0,46	16. 12,84	89. 58. 23,16	24,78	+ 1,62
23. 5. 40. 1,9	I.	1. 7,60	13. 46. 50,16	50,67	+ 0,51	N.	50. 23,17	16. 12,15	95. 44. 13,64	13,54	- 0,10

Mar. 5. The correction +0,02 is applied to 2 L. for defect of illumination.

Mar. 6. The N.L. was not quite full: correction applied = -0",15.

April 13. The N.L. was too faint for observation with the Circle, as is shewn by the discordance of the three bisections. See the Circle observation.

May 3. The correction -0,05 is applied to 1 L. for defect of illumination.

June 30. The N.L. was not quite full: calculated correction = -0",01.



Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.		R.A. of Centre from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		m.	s.	h.	m.	s.	s.	s.		"	"	"	"	"	"	"
July	26.	8.	18.39,3	I.	1.	10,92	16.	37.	43,28	43,56	+ 0,28	N.	55. 48,39	16. 1,52	109. 41. 41,20	43,68	+ 2,48		
	27.	9.	15.17,4	I.	1.	11,73	17.	38.	27,22	27,54	+ 0,32	N.	56. 10,06	15. 55,34	112. 12. 10,50	14,39	+ 3,89		
	28.	10.	12.43,3	I.	1.	11,72	18.	39.	59,16	59,58	+ 0,42	S.	56. 7,63	15. 47,86	113. 15. 49,09	53,01	+ 3,92		
	29.	11.	9.27,9	I.	1.	10,77	19.	40.	49,62	50,00	+ 0,38	S.	55. 30,80	15. 39,26	112. 50. 9,96	14,29	+ 4,33		
	30.	12.	4. 3,5	I.	1.	9,06	20.	39.	30,83	31,32	+ 0,49	S.	54. 29,88	15. 29,88	111. 2. 8,17	12,09	+ 3,92		
				II.	1.	9,06	20.	39.	30,67	31,32	+ 0,65								
	31.	12.	55.34,0	II.	1.	6,95	21.	35.	6,29	6,92	+ 0,63	S.	53. 4,42	15. 20,27	108. 5. 41,36	42,14	+ 0,78		
Aug.	23.	7.	10.12,8	I.	1.	11,27	17.	19.	29,08	29,15	+ 0,07	N.	55. 54,68	15. 53,24	111. 42. 45,42	43,51	- 1,91		
	26.	9.	57.13,8	I.	1.	9,24	20.	18.	47,19	47,73	+ 0,54	S.	54. 32,48	15. 26,88	111. 52. 38,77	40,89	+ 2,12		
	27.	10.	49. 4,6	I.	1.	7,34	21.	14.	43,07	43,48	+ 0,41	S.	53. 20,62	15. 18,46	109. 19. 25,33	25,82	+ 0,49		
	28.	11.	37.53,8	I.	1.	5,34	22.	7.	36,88	37,65	+ 0,77	S.	51. 45,04	15. 10,47	105. 48. 57,29	55,89	- 1,40		
	30.	13.	7.22,1	II.	1.	2,17	23.	45.	12,93	14,06	+ 1,13	N.	47. 3,99	14. 56,61	96. 59. 0,24	55,23	- 5,01		
Sept.	21.	6.	58.46,7	I.	1.	11,17	19.	2.	21,16	21,54	+ 0,38	S.	55. 40,95	15. 39,14	113. 34. 59,53	60,27	+ 0,74		
	22.	7.	53.37,8	I.	1.	9,69	20.	1.	17,86	17,88	+ 0,02	S.	54. 46,96	15. 27,88	112. 36. 28,34	30,25	+ 1,91		
	24.	9.	34.57,7									S.	52. 7,63	15. 9,19	107. 8. 48,87	48,07	- 0,80		
	25.	10.	21.11,1									S.	50. 16,29	15. 1,77	103. 8. 52,34	51,17	- 1,17		
	29.	13.	8.58,7	II.	1.	1,18	1.	45.	6,35	7,28	+ 0,93	N.	39. 4,06	14. 45,07	84. 1. 29,70	19,91	- 9,79		
Oct.	18.	4.	51.44,3	I.	1.	12,66	18.	41.	24,78	25,91	+ 1,13	S.	56. 42,75	15. 55,37	113. 51. 25,98	30,78	+ 4,80		
	19.	5.	48.42,9	I.	1.	11,09	19.	42.	29,29	29,88	+ 0,59	S.	55. 40,93	15. 40,12	113. 19. 47,83	50,39	+ 2,56		
	20.	6.	42.37,5	I.	1.	8,92	20.	40.	29,35	30,07	+ 0,72	S.	54. 23,24	15. 26,20	111. 26. 14,68	16,66	+ 1,98		
	23.	9.	4.10,9	I.	1.	2,72	23.	14.	15,62	15,99	+ 0,37	S.	48. 47,01	14. 56,54	100. 13. 32,83	32,97	+ 0,14		
Nov.	15.	3.	36.55,8	I.	1.	13,23	19.	16.	47,57	48,63	+ 1,06	S.	57. 6,29	16. 1,66	113. 56. 2,70	16,62	(+13,92)		
	17.	5.	27.38,6	I.	1.	8,39	21.	15.	41,70	42,23	+ 0,53	S.	54. 7,98	15. 29,30	109. 51. 9,85	11,15	+ 1,30		
	20.	7.	45.23,6	I.	1.	2,09	23.	45.	38,93	39,14	+ 0,21	S.	47. 21,68	14. 55,52	97. 12. 42,40	37,99	- 4,41		
	26.	11.	59. 0,3	II.	1.	5,33	4.	23.	36,62	37,30	+ 0,68	S.	29. 38,24	14. 51,17	70. 19. 53,92	46,90	- 7,02		
	27.	12.	47.20,0	II.	1.	6,95	5.	16.	0,81	1,43	+ 0,67	N.	27. 15,88	14. 56,06	67. 44. 41,61	35,48	- 6,13		
Dec.	17.	5.	41.30,1	I.	1.	3,25	23.	27.	52,10	52,47	+ 0,37	S.	48. 52,12	15. 6,80	99. 8. 54,27	52,69	- 1,58		
	20.	7.	45.25,1	I.	1.	1,30	1.	43.	57,22	57,48	+ 0,26	S.	39. 39,04	14. 47,32	84. 16. 8,76	0,79	- 7,97		
	23.	9.	54.23,0									S.	30. 37,06	14. 51,90	71. 31. 37,06	29,20	- 7,86		
	27.	13.	18. 6,2	II.	1.	9,54	7.	45.	8,86	9,45	+ 0,59	S.	27. 18,10	15. 19,33	66. 26. 57,61	53,22	- 4,39		

July 30. The 2 L. was not quite full, but no correction was required.

Oct. 23. The micrometer readings in page 85 have been diminished by 1". The integral number of revolutions was not set down by the observer.

Nov. 15. Only one Circle bisection and that very doubtful.

Nov. 27. The N.L. was not so full as S.L., but no correction is required.

### RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF FLORA.

Greenwich Mean Solar Time of Transit.				Number of wires.	R.A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.	s.	s.	"	"	"	"	"	"
Mar.	17.	12.	54.9,9							4,09	83.55.15,52			14,59	- 60,93
	19.	12.	44.24,3	7	12.35.36,27			24,78	- 11,49	4,08	83.40.12,78			7,35	- 65,43
	20.	12.	39.30,7	5	12.34.38,43			27,02	- 11,41	4,07	83.32.50,19			39,48	- 70,71
	23.	12.	24.48,2	7	12.31.43,18			31,53	- 11,65	4,05	83.10.50,16			45,64	- 64,52
Apr.	1.	11.	40.37,3	7	12.22.53,95			42,45	- 11,50	3,94	82.11.31,11			28,77	- 62,34
	2.	11.	35.44,1	7	12.21.56,46			45,01	- 11,45						
	10.	10.	57.1,4	5	12.14.39,89			28,75	- 11,14						
	12.	10.	47.29,5	7	12.12.59,49			48,36	- 11,13	3,76	81.17.37,40			33,99	- 63,41
	13.	10.	42.45,0	7	12.12.10,75			59,75	- 11,00	3,74	81.13.54,90			52,23	- 62,67
	14.	10.	38.1,7	7	12.11.23,26			12,26	- 11,00	3,72	81.10.26,06			23,33	- 62,73
	16.	10.	28.38,7	7	12.9.51,82			40,86	- 10,96	3,68	81.4.3,90			4,49	- 59,41
	17.	10.	23.59,0	7	12.9.7,91			57,04	- 10,87	3,67	81.1.22,38			14,80	- 67,58
	21.	10.	5.33,5	5	12.6.25,60			15,16	- 10,44	3,59	80.52.1,95			8,46	- 53,49
	23.	9.	56.29,6	5	12.5.13,30			2,72	- 10,58	3,55	80.48.45,33			55,28	- 50,05
	24.	9.	51.59,7	7	12.4.39,23			28,72	- 10,51						
	26.	9.	43.4,2	5	12.3.35,35			25,26	- 10,09						
	27.	9.	38.39,0	7	12.3.6,01			55,84	- 10,17	3,48	80.44.52,68			6,23	- 46,45
May	1.	9.	21.13,2	5	12.1.23,51			13,77	- 9,74	3,40	80.44.38,23			42,16	- 56,07
	3.	9.	12.40,0	7	12.0.42,07			32,19	- 9,88	3,36	80.45.34,39			44,59	- 49,80
	4.	9.	8.25,7	4	12.0.23,61			13,78	- 9,83	3,35	80.46.23,05			33,81	- 49,24
	6.	9.	0.1,4	2	11.59.51,07			41,71	- 9,36						



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MELPOMENE.

Greenwich Mean Solar Time of Transit.				Number of wires.	R.A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				°	'	"		
June	29.	11.	34.39,5	3	18.	7.	48,69	49,43	+ 0,74						
	30.	11.	29.41,0	7	18.	6.	45,86	46,87	+ 1,01	5,80	98.	33.	30,38	38,15	+ 7,77
July	1.	11.	24.43,1	3	18.	5.	43,74	44,55	+ 0,81	5,81	98.	37.	2,35	12,70	+ 10,35
	3.	11.	14.48,1	7	18.	3.	40,23	40,98	+ 0,75	5,82	98.	44.	44,69	51,76	+ 7,07
	5.	11.	4.54,7	7	18.	1.	38,34	39,31	+ 0,97	5,83	98.	53.	7,78	9,89	+ 2,11
	6.	10.	59.59,4	7	18.	0.	38,78	39,38	+ 0,60	5,84	98.	57.	26,03	33,26	+ 7,23
	7.	10.	55.4,5	7	17.	59.	39,57	40,16	+ 0,59	5,84	99.	2.	0,00	5,95	+ 5,95
	8.	10.	50.10,0	7	17.	58.	40,89	41,72	+ 0,83	5,84	99.	6.	40,88	47,72	+ 6,84
	9.	10.	45.16,6	4	17.	57.	43,20	44,12	+ 0,92	5,84	99.	11.	27,50	38,41	+ 10,91
	10.	10.	40.24,4							5,84	99.	15.	59,87	97,89	(+ 38,02)
	12.	10.	30.42,8	7	17.	54.	56,65	57,20	+ 0,55	5,83	99.	26.	56,52	62,21	+ 5,69
	15.	10.	16.18,9	5	17.	52.	20,06	20,55	+ 0,49	5,82	99.	43.	28,97	38,97	+ 10,00
	17.	10.	6.49,3	2	17.	50.	42,01	42,72	+ 0,71						
	19.	9.	57.25,7	7	17.	49.	10,00	10,74	+ 0,74	5,79	100.	7.	23,66	30,11	+ 6,45
	22.	9.	43.32,6	7	17.	47.	4,27	4,69	+ 0,42	5,77	100.	26.	24,62	31,09	+ 6,47
	23.	9.	38.58,1	7	17.	46.	25,57	26,03	+ 0,46	5,75	100.	32.	56,81	62,83	+ 6,02
	27.	9.	20.57,8							5,70	100.	59.	52,71	56,20	+ 3,49
	29.	9.	12.9,3	6	17.	43.	11,69	11,94	+ 0,25	5,67	101.	13.	50,04	54,75	+ 4,71
	30.	9.	7.47,5	5	17.	42.	45,78	46,15	+ 0,37	5,66	101.	20.	53,74	57,86	+ 4,12
Aug.	2.	8.	54.54,2	4	17.	41.	40,02	40,49	+ 0,47	5,61	101.	42.	22,67	27,12	+ 4,45
	4.	8.	46.28,5	7	17.	41.	6,05	6,61	+ 0,56	5,57	101.	56.	56,95	60,81	+ 3,86
	5.	8.	42.19,3	7	17.	40.	52,69	52,68	- 0,01	5,55	102.	4.	16,86	21,24	+ 4,38
	6.	8.	38.11,6	5	17.	40.	40,88	40,77	- 0,11	5,53	102.	11.	39,22	43,76	+ 4,54
	10.	8.	22.0,3	1	17.	40.	13,21	13,54	+ 0,33	5,46	102.	41.	65,34	30,42	(- 34,92)

July 10. The object was probably not the Planet.

Aug. 10. The Transit and Circle observations were both quite uncertain.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF METIS.

May	19.	13.	17.11,7	4	17.	8.	58,86	57,66	- 1,20	4,86	113.	21.	30,78	24,59	- 6,19
June	4.	11.	57.55,4	7	16.	52.	34,44	33,56	- 0,88	4,98	113.	30.	35,71	34,60	- 1,11
	8.	11.	37.54,6	3	16.	48.	16,54	15,40	- 1,14	4,98	113.	31.	23,69	20,50	- 3,19
	21.	10.	33.41,2	3	16.	35.	7,86	7,24	- 0,62						

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MASSILIA.

Oct.	11.	10.	29.42,4	4	23.	52.	42,52	40,25	- 2,27	4,82	90.	21.	25,82	43,39	+ 17,57
	12.	10.	25.0,8	7	23.	51.	56,72	54,38	- 2,34	4,82	90.	26.	45,45	66,12	+ 20,67
	18.	9.	57.16,5	7	23.	47.	47,21	44,80	- 2,41						
	19.	9.	52.43,3							4,75	91.	0.	47,81	62,56	+ 14,75

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF LUTETIA.

Dec.	15.	8.	47.2,3	7	2.	25.	61,76	57,29	- 4,47	3,47	77.	35.	18,93	37,95	+ 19,02
	20.	8.	26.56,2	3	2.	25.	35,08	30,36	- 4,72	3,34	77.	27.	32,06	52,48	+ 20,42



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF FORTUNA.

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Aug. 26. 11. 57. 4,9	7	22. 18. 57,98	57,45	- 0,53	6,26	97. 54. 11,63	15,60	+ 3,97
27. 11. 52. 16,1	7	22. 18. 4,91	4,40	- 0,51	6,27	97. 59. 47,66	50,01	+ 2,35
28. 11. 47. 27,2	5	22. 17. 11,76	11,36	- 0,40	6,28	98. 5. 23,50	25,87	+ 2,37
30. 11. 37. 49,8					6,30	98. 16. 38,07	40,22	+ 2,15
31. 11. 33. 1,7	4	22. 14. 33,54	33,04	- 0,50	6,31	98. 22. 15,81	17,80	+ 1,99
Sept. 1. 11. 23. 13,5	7	22. 13. 41,13	40,79	- 0,34	6,31	98. 27. 52,49	54,96	+ 2,47
2. 11. 23. 25,9	5	22. 12. 49,36	48,95	- 0,41				
3. 11. 18. 38,8	7	22. 11. 57,95	57,57	- 0,38	6,32	98. 39. 5,94	6,30	+ 0,36
8. 10. 54. 52,5	1	22. 7. 50,59	50,46	- 0,13				
9. 10. 50. 10,0	7	22. 7. 3,84	3,67	- 0,17	6,31	99. 11. 39,06	42,77	+ 3,71
11. 10. 40. 47,6	5	22. 5. 33,04	32,79	- 0,25	6,29	99. 22. 0,85	4,69	+ 3,84
13. 10. 31. 30,0	7	22. 4. 6,96	6,64	- 0,32				
16. 10. 17. 43,2	7	22. 2. 7,53	7,19	- 0,34	6,23	99. 46. 14,16	18,31	+ 4,15
17. 10. 13. 10,3	7	22. 1. 30,44	30,23	- 0,21	6,22	99. 50. 42,34	48,94	+ 6,60
21. 9. 55. 14,8	7	21. 59. 18,26	18,01	- 0,25	6,14	100. 7. 33,49	33,99	+ 0,50
25. 9. 37. 46,1	4	21. 57. 32,88	32,74	- 0,14	6,06	100. 21. 57,31	63,15	+ 5,84
30. 9. 16. 35,4	4	21. 56. 1,49	1,87	+ 0,38				
Oct. 12. 8. 29. 1,3	6	21. 55. 38,15	38,60	+ 0,45	5,56	100. 54. 31,52	43,16	+ 11,64
18. 8. 6. 58,6	3	21. 57. 11,19	11,35	+ 0,16	5,37	100. 54. 17,91	19,60	+ 1,69
19. 8. 3. 24,3	6	21. 57. 32,90	33,40	+ 0,50	5,33	100. 53. 39,87	38,83	- 1,04

The observations in October were very uncertain on account of the faintness of the Planet.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THETIS.

Apr. 27. 9. 33. 17,0	6	11. 57. 43,10	43,40	+ 0,30	3,96	80. 51. 54,23	51,50	- 2,73
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## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EGERIA.

Mar. 3. 13. 18. 40,2	7	12. 6. 52,97	46,89	- 6,08				
4. 13. 13. 43,9	7	12. 5. 52,37	46,27	- 6,10	2,69	65. 40. 92,43	44,13	- 48,30
5. 13. 8. 46,5	1	12. 4. 50,77	44,77	- 6,00				
13. 12. 28. 45,9	7	11. 56. 15,92	9,58	- 6,34	2,66	65. 21. 6,80	23,81	- 42,99
17. 12. 8. 38,6	7	11. 51. 30,20	45,09	(+ 14,89)	2,65	65. 18. 54,60	11,10	- 43,50
19. 11. 58. 36,0	4	11. 49. 40,48	33,50	- 6,98	2,64	65. 19. 26,46	44,35	- 42,11
20. 11. 53. 34,1	7	11. 48. 34,26	28,18	- 6,08	2,64	65. 20. 14,00	28,19	- 45,81
22. 11. 43. 33,5	6	11. 46. 25,08	18,94	- 6,14	2,63	65. 22. 41,34	49,02	- 52,32
23. 11. 38. 34,0	7	11. 45. 21,32	15,18	- 6,14	2,63	65. 24. 8,05	26,01	- 42,04
Apr. 1. 10. 54. 16,9	7	11. 36. 25,99	20,37	- 5,62	2,59	65. 51. 40,95	4,07	- 36,88
3. 10. 44. 39,7	2	11. 34. 40,29	33,87	- 6,42	2,59	66. 0. 31,66	17,27	(- 14,39)
8. 10. 20. 57,9	4	11. 30. 37,34	31,94	- 5,40	2,57	66. 28. 25,23	51,47	- 33,76
12. 10. 2. 27,9	2	11. 27. 50,50	45,82	- 4,68				
13. 9. 57. 55,0	7	11. 27. 13,40	8,35	- 5,05	2,56	67. 1. 57,59	24,28	- 33,31
14. 9. 53. 23,2	7	11. 26. 37,48	32,55	- 4,93	2,55	67. 9. 21,24	46,55	- 34,69
16. 9. 44. 25,1	7	11. 25. 30,96	26,04	- 4,92	2,55	67. 24. 44,43	8,19	- 36,24

March 17. The object observed with the Transit was most probably the north-preceding star mentioned in the Note to the Circle observation.

April 3. Either an error of 1' of the micrometer, or the object bisected was not the Planet.

April 12. After p. 68 was printed, it was ascertained that the object bisected was a star, probably that noticed as lower in the field by the Transit observer.

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EGERIA *continued.*

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
April 17. 9. 39. 58,8	5	11. 25. 0,54	55,37	- 5,17	2,55	67. 32. 38,70	6,89	- 31,81
19. 9. 31. 11,3	5	11. 24. 4,64	59,27	- 5,37	2,54	67. 49. 12,33	38,75	- 33,58
20. 9. 26. 49,3	3	11. 23. 38,52	33,85	- 4,67				
21. 9. 22. 28,8	2	11. 23. 13,83	10,19	- 3,64				
23. 9. 13. 56,0	7	11. 22. 32,70	28,16	- 4,54	2,53	68. 24. 19,88	50,05	- 29,83
24. 9. 9. 41,7	5	11. 22. 14,27	9,79	- 4,48	2,52	68. 33. 21,33	2,49	- 18,84
26. 9. 1. 18,4	7	11. 21. 42,73	38,31	- 4,42	2,52	68. 52. 23,41	54,69	- 28,72
27. 8. 57. 9,2	7	11. 21. 29,40	25,19	- 4,21	2,52	69. 1. 55,52	33,78	- 21,74
May 1. 8. 40. 50,1	4	11. 20. 53,86	49,83	- 4,03	2,50	69. 41. 53,90	29,39	- 24,51
3. 8. 32. 50,6	4	11. 20. 46,18	42,24	- 3,94	2,50	70. 2. 49,48	10,81	(- 38,67)
4. 8. 28. 53,4	3	11. 20. 44,86	40,90	- 3,96				
5. 8. 24. 59,2	1	11. 20. 46,53	41,19	(- 5,34)				

May 3-5. The Planet had become too faint for accurate observation.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF IRENE.

Aug. 26. 13. 1. 49,2					4,01	108. 10. 26,19	21,89	- 4,30
Sept. 1. 12. 33. 16,6	1	23. 18. 54,94	54,78	- 0,16	4,03	108. 49. 6,00	7,91	+ 1,91
3. 12. 23. 42,2	4	23. 17. 12,05	11,71	- 0,34	4,04	109. 1. 19,42	18,54	- 0,88
8. 11. 59. 42,3	2	23. 12. 50,96	50,38	- 0,58	4,04	109. 29. 37,79	39,84	+ 2,05
9. 11. 54. 53,3	1	23. 11. 57,77	57,92	+ 0,15	4,03	109. 34. 48,19	55,85	+ 7,66
11. 11. 45. 17,6	2	23. 10. 13,60	13,25	- 0,35	4,03	109. 45. 3,18	1,16	- 2,02

The Planet was observed with difficulty on account of its faintness.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THALIA.

Dec. 20. 9. 10. 14,8	7	3. 9. 0,82	1,09	+ 0,27	3,63	72. 51. 43,77	54,92	+ 11,15
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## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF CALLIOPE.

Nov. 19. 13. 13. 50,4	7	5. 11. 3,13	3,06	- 0,07	2,35	65. 17. 1,94	57,89	- 4,05
26. 12. 39. 44,1					2,34	64. 44. 42,80	48,78	+ 5,98
Dec. 10. 11. 30. 1,4	3	4. 49. 44,83	43,57	- 1,26				
11. 11. 25. 1,7	3	4. 48. 40,81	40,07	- 0,74	2,27	63. 44. 44,93	47,34	+ 2,41
14. 11. 10. 6,6	7	4. 45. 33,00	32,32	- 0,68	2,24	63. 34. 35,31	34,48	- 0,83
15. 11. 5. 9,4	6	4. 44. 31,52	30,92	- 0,60	2,24	63. 31. 24,73	18,20	- 6,53
20. 10. 40. 35,8	4	4. 39. 36,67	36,10	- 0,57	2,19	63. 16. 0,92	54,52	- 6,40
21. 10. 35. 43,8	5	4. 38. 40,47	40,08	- 0,39	2,18	63. 12. 56,58	60,63	+ 4,05
28. 10. 2. 15,9	6	4. 32. 42,88	42,73	- 0,15	2,11	62. 54. 16,32	11,93	- 4,39



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF PSYCHE.

Greenwich Mean Solar Time of Transit.				Number of wires.	R.A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				°	'	"		
Apr.	12.	8.25.	2,7	3	9.50.		9,32	3,78	-5,54	2,04	76.12.	41,10		14,58	-26,52
	13.	8.21.	5,3	5	9.50.		7,81	2,64	-5,17	2,03	76.11.	58,40		40,46	-17,94
	14.	8.17.	9,7							2,02	76.11.	34,51		13,25	-21,26
	16.	8.9.	21,7	1	9.50.		12,00	6,68	-5,32	2,00	76.11.	10,49		39,25	-31,24

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF HYGEIA.

Nov.	2.13.53.	44,5	7	4.43.	62,40	31,50	-30,90	1,47	64.9.	39,79	70,00	+30,21
	3.13.49.	12,9	5	4.43.	26,58	55,02	-31,56	1,47	64.10.	33,86	11,71	+37,85
	17.12.44.	1,8	5	4.33.	16,56	45,11	-31,45	1,54	64.31.	34,83	18,80	+43,97
	18.12.39.	17,7	7	4.32.	28,27	56,02	-32,25	1,54	64.33.	38,54	17,81	+39,27
Dec.	19.12.34.	32,6	7	4.31.	38,89	6,43	-32,46	1,55	64.35.	35,29	20,51	+45,22
	27.11.56.	17,6	7	4.24.	50,09	17,71	-32,38	1,57	64.53.	54,45	43,93	+49,47
	14.10.35.	18,7	7	4.10.	39,38	8,32	-31,06	1,60	65.41.	4,94	14,99	+70,05
	15.10.30.	37,4	3	4.9.	53,81	23,02	-30,79	1,60	65.44.	17,84	12,02	+54,18
	17.10.21.	17,3	7	4.8.	25,36	54,88	-30,48	1,60	65.50.	2,73	5,86	+63,13
	20.10.7.	24,0	6	4.6.	19,42	49,34	-30,08	1,59	65.58.	52,76	53,51	+60,75
	21.10.2.	48,5	7	4.5.	39,74	9,42	-30,32	1,59	66.1.	38,78	47,50	+68,72
	28.9.	31.7,1	5	4.1.	28,99	59,90	-29,09	1,58	66.21.	24,34	23,09	+58,75
	30.9.	22.14,4	5	4.0.	27,92	58,93	-28,99	1,57	66.26.	37,88	40,93	+63,05

Dec. 14. The Circle observation was taken under unfavorable circumstances.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF NEPTUNE.

Aug.	7.13.43.	16,6	7	22.50.	22,54	22,53	-0,01	0,26	98.23.	5,99	3,83	-2,16
	13.13.18.	58,0	7	22.49.	49,27	49,34	+0,07	0,26	98.26.	34,89	34,56	-0,33
	26.12.26.	34,5	7	22.48.	32,45	32,40	-0,05	0,26	98.34.	37,82	36,62	-1,20
	27.12.22.	32,6	7	22.48.	26,36	26,30	-0,06	0,26	98.35.	18,00	14,49	-3,51
Sept.	28.12.18.	30,5	7	22.48.	20,15	20,19	+0,04	0,26	98.35.	54,34	52,39	-1,95
	30.12.10.	23,4	7	22.48.	7,86	7,94	+0,08	0,26	98.37.	9,56	8,21	-1,35
	31.12.6.	24,3	6	22.48.	1,70	1,80	+0,10	0,26	98.37.	47,30	46,13	-1,17
	1.12.2.	22,4	7	22.47.	55,63	55,66	+0,03	0,26	98.38.	25,65	24,06	-1,59
	2.11.58.	20,4	5	22.47.	49,52	49,51	-0,01					
	3.11.54.	18,3						0,26	98.39.	41,63	39,89	-1,74
	8.11.34.	8,1	7	22.47.	12,61	12,70	+0,09	0,26	98.42.	50,82	48,54	-2,28
	9.11.30.	6,2	7	22.47.	6,57	6,60	+0,03	0,26	98.43.	28,37	25,97	-2,40
	11.11.22.	2,3	7	22.46.	54,47	54,45	-0,02	0,26	98.44.	42,44	40,37	-2,07
	13.11.13.	58,2	7	22.46.	42,12	42,38	+0,26	0,26	98.45.	54,64	54,02	-0,62
	16.11.1.	52,8	7	22.46.	24,48	24,47	-0,01	0,26	98.47.	42,44	42,92	+0,48
	17.10.57.	51,0	7	22.46.	18,55	18,56	+0,01	0,26	98.48.	19,91	18,76	-1,15
Oct.	21.10.41.	44,3	7	22.45.	55,35	55,32	-0,03	0,26	98.50.	40,43	39,12	-1,31
	25.10.25.	38,1	7	22.45.	32,77	32,79	+0,02	0,26	98.52.	55,29	54,36	-0,93
	5.9.	45.26,9	5	22.44.	40,43	40,49	+0,06	0,26	98.58.	7,96	5,33	-2,63
	6.9.	41.26,1	7	22.44.	35,52	35,63	+0,11	0,26	98.58.	37,92	34,02	-3,90
	7.9.	37.25,5	7	22.44.	30,82	30,85	+0,03	0,26	98.59.	5,61	2,23	-3,38
	11.9.	21.23,7	7	22.44.	12,60	12,51	-0,09	0,26	99.0.	52,09	49,98	-2,11
	12.9.	17.23,2						0,26	99.1.	18,34	15,62	-2,72
	18.8.	53.23,4	7	22.43.	43,59	43,81	+0,22	0,26	99.3.	38,75	37,20	-1,55
	19.8.	49.24,0	7	22.43.	40,10	40,09	-0,01	0,26	99.4.	1,70	58,68	-3,02
	23.8.	33.26,6	7	22.43.	26,30	26,22	-0,08	0,26	99.5.	19,82	18,27	-1,55
	4.7.	45.44,2	7	22.42.	54,74	54,99	+0,25	0,25	99.8.	16,98	12,39	-4,59
	16.6.	58.19,4	7	22.42.	40,81	40,83	+0,02	0,25	99.9.	25,15	21,66	-3,49
Nov.	17.6.	54.23,0	7	22.42.	40,29	40,47	+0,18	0,25	99.9.	28,01	22,46	-5,55
	27.6.	15.7,6	7	22.42.	43,98	43,93	-0,05	0,25	99.8.	49,45	47,86	-1,59
	8.5.	32.11,1	6	22.43.	2,59	2,58	-0,01	0,25	99.6.	43,30	40,96	-2,34
	11.5.	20.31,3	7	22.43.	10,54	10,36	-0,18	0,25	99.5.	53,13	49,69	-3,44
Dec.	18.4.	53.22,3	7	22.43.	32,99	32,84	-0,15	0,25	99.3.	28,06	25,27	-2,79
	20.4.	45.37,9	7	22.43.	40,43	40,35	-0,08	0,25	99.2.	39,22	37,53	-1,69

DETERMINATION OF THE POSITION OF THE ECLIPTIC, AND OF THE MEAN ERROR OF  
THE ASSUMED RIGHT ASCENSIONS OF THE FUNDAMENTAL STARS, FROM THE  
TRANSIT AND CIRCLE OBSERVATIONS OF THE SUN IN THE YEAR 1852.

The total number of Circle Observations of the Sun is 137 inclusive of 19 observations of single Limbs. The observation of a single Limb on Jan. 17, and the observation on Jan. 28 being rejected, these being more discordant than any of the others, the remainder have been divided into four groups each containing  $31\frac{1}{2}$  observations, an observation of a single Limb being reckoned as half an observation. Each of these groups is subdivided into three groups, as exhibited in the subjoined Table, which also contains the limiting days and the mean day of each group, the mean value ( $\alpha$ ) of the Tabular Errors in North Polar Distance, derived from pages 108—110, (half-weight being given to the results from observations of single Limbs), and the Sun's Longitude ( $\lambda$ ) and North Polar Distance ( $\Delta$ ) at the mean noon of the mean day.

Limiting Days of Observation of each group.	Mean Day.	Mean of the Tabular Errors in N.P.D.	Number of Observations.	Sun's Longitude at mean Noon of mean Day.	Sun's N.P.D. at mean Noon of mean Day.
		"		° ' "	° ' "
Jan. 3.....Feb. 18 Feb. 20.....Mar. 12 Mar. 15.....Apr. 10	Jan. 26 Mar. 1 Mar. 27	+ 0,67 - 0,06 - 0,02	11 $10\frac{1}{2}$ 10	305.45.31 341. 6.28 6.59. 9	108.50.48 97.24.20 87.13.29
Apr. 12.....Apr. 26 May 1.....June 17 June 22.....July 9	Apr. 19 May 19 July 2	+ 1,08 + 0,18 - 0,25	11 10 $10\frac{1}{2}$	29.33.36 58.36. 0 100.39.56	78.40.28 70. 8.12 66.58.15
July 10.....July 27 July 28.....Aug. 28 Aug. 30.....Sept. 24	July 19 Aug. 12 Sept. 11	- 0,68 - 1,30 - 0,56	$10\frac{1}{2}$ 11 10	116.52.45 139.51. 2 168.51.24	69.12. 7 75. 7.37 85.35.15
Sept. 30.....Oct. 23 Nov. 3.....Dec. 1 Dec. 5.....Dec. 30	Oct. 12 Nov. 18 Dec. 20	- 0,53 - 1,25 - 0,57	10 11 $10\frac{1}{2}$	199.18.50 236.21.28 268.50.41	97.33.56 109.21.16 113.27.13

*Formula of Calculation.*

$$\alpha + m \cos \lambda \operatorname{cosec} \Delta + n \sin \lambda \operatorname{cosec} \Delta + p = 0.$$

The following equations were formed according to this formula by means of the data in the above Table, each equation being multiplied by the respective number of observations.

$$\begin{array}{lcl}
 \text{First Quarter} & \left\{ \begin{array}{l} \text{Jan. 26.....} + 7,37 + m \times 6,7922 - n \times 9,4320 + 11,0p = 0. \\ \text{Mar. 1.....} - 0,63 + m \times 10,0179 - n \times 3,4284 + 10,5p = 0. \\ \text{Mar. 27.....} - 0,20 + m \times 9,9374 + n \times 1,2177 + 10,0p = 0. \end{array} \right. \\
 \text{Second Quarter} & \left\{ \begin{array}{l} \text{Apr. 19.....} + 11,88 + m \times 9,7583 + n \times 5,5345 + 11,0p = 0. \\ \text{May 19.....} + 1,80 + m \times 5,5397 + n \times 9,0754 + 10,0p = 0. \\ \text{July 2.....} - 2,63 - m \times 2,1116 + n \times 11,2121 + 10,5p = 0. \end{array} \right. \\
 \text{Third Quarter} & \left\{ \begin{array}{l} \text{July 19.....} - 7,14 - m \times 5,0781 + n \times 10,0184 + 10,5p = 0. \\ \text{Aug. 12.....} - 14,30 - m \times 8,6995 + n \times 7,3385 + 11,0p = 0. \\ \text{Sept. 11.....} - 5,60 - m \times 9,8406 + n \times 1,9384 + 10,0p = 0. \end{array} \right. \\
 \text{Fourth Quarter} & \left\{ \begin{array}{l} \text{Oct. 12.....} - 5,30 - m \times 9,5201 - n \times 3,3365 + 10,0p = 0. \\ \text{Nov. 18.....} - 13,75 - m \times 6,4591 - n \times 9,7062 + 11,0p = 0. \\ \text{Dec. 20.....} - 5,99 - m \times 0,2308 - n \times 11,4433 + 10,5p = 0. \end{array} \right.
 \end{array}$$

The above equations give the following by adding and subtracting as here indicated:

$$\text{First Quarter} + \text{Second} + \text{Third} + \text{Fourth} \dots - 34'',49 + m \times 0,1057 + n \times 8,9886 + 126p = 0.$$

$$\text{First Quarter} + \text{Second} - \text{Third} - \text{Fourth} \dots + 69'',67 + m \times 79,7621 + n \times 19,3700 = 0.$$

$$\text{First Quarter} - \text{Second} - \text{Third} + \text{Fourth} \dots - 2'',51 + m \times 20,9693 - n \times 81,2460 = 0.$$

The solution of these equations gives,

$$m = - 0'',815, \quad n = - 0'',241, \quad p = + 0'',292.$$



Let  $\delta\lambda$  = the mean excess for the year of the Tabular Longitude of the Sun above the true Longitude.

$\delta R$  = the mean excess for the year of the Tabular R.A. of the Sun above the true R.A.

$\delta\Delta$  = the mean excess for the year of the Tabular N.P.D. of the Sun above the true N.P.D.

$\delta I$  = the excess of the Obliquity ( $I$ ) assumed in the Tables above the true Obliquity.

$A = -0^s,086$ , which is the mean of the 139 apparent excesses of the Tabular R.A. in pages 108—110, (those of May 7 and July 23 being excluded), an observation of a single Limb being reckoned of half-weight.

$D = -0'',275$ , which is the mean of the 135 apparent excesses of Tabular N.P.D. used in forming the above equations, an observation of a single Limb being reckoned of half-weight.

$q$  = the mean excess of the assumed R.A. of the fundamental stars above the true R.A.

$p$  = the mean excess within the Tropics of the N.P.D. determined by the Circle observations and calculations of 1852 above the true N.P.D.

Then,  $\delta\lambda = m \operatorname{cosec} I = -0'',815 \times \operatorname{cosec} 23^\circ.27',5 = -2'',047$ .

$$\delta R = \Sigma. \frac{\cos I \operatorname{cosec}^2 \Delta}{2\pi} = \frac{\delta\lambda}{15} \text{ nearly} = -0^s,136.$$

$$\delta\Delta = (\text{Tabular N.P.D.} - \text{Observed N.P.D.}) + (\text{Observed N.P.D.} - \text{True N.P.D.})$$

$$= D + p = -0'',275 + 0'',292 = +0'',017.$$

$$\delta I = n \sec I = -0'',241 \times \sec 23^\circ.27',5 = -0'',263.$$

$$q = (\text{Tabular R.A.} - \text{True R.A.}) - (\text{Tabular R.A.} - \text{Observed R.A.})$$

$$= \delta R - A = -0^s,136 + 0^s,086 = -0^s,050.$$

Hence the assumed R.A. of the fundamental stars are too small by the mean quantity  $0^s,050$ .





OCCULTATIONS  
OF  
FIXED STARS BY THE MOON,  
WITH  
THE EQUATIONS GIVEN BY THE CALCULATION  
OF THE OCCULTATIONS.

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1852.

Day of Observation 1852.	Phænomenon.	Moon's Limb.	Chronom.	Instrument.	Time by Chronometer.	Sidereal Time.	Greenwich Mean Solar Time.	Observer.
					<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	
Feb. 3	(a) Disappearance of 63 Geminorum	Dark	X.	Northumb. Equat.	3.31.11,7	3.30.15,80	6.37.29,03	B.
			U.	5-feet Equatorial	3.31.18	3.30.11,30		T.
...	(b) Reappearance of 63 Geminorum	Bright	X.	Northumb. Equat.	4.38.16,3	4.37.20,38	7.44.22,62	B.
			U.	5-feet Equatorial	4.38.34	4.37.27,13		T.
May 2	(c) Disappearance of 94 Virginis	Dark	X.	Northumb. Equat.	15.54.11,8	15.54.43,98	13.9.59,47	B.
July 4	(d) Reappearance of 29 Aquarii	Dark	X.	Northumb. Equat.	20.11.56,8	20.11.49,08	13.18.40,07	B.
30	(e) Disappearance of 17 Capricorni	Dark	X.	Northumb. Equat.	18.53.17,0	18.52.50,94	10.17.41,17	T.
			X.	Northumb. Equat.	21.2.35,1	21.1.14,55	10.39.34,21	B.
Aug. 26	(f) Disappearance of B.A.C. 7049	Dark	U.	5-feet Equatorial	20.36.59,0	21.1.14,95	10.39.34,61	T.

(a) 'Time very exact: thin clouds passing over the Moon.' (B.) T. was uncertain whether the disappearance was caused by passing clouds. The counting, which was continued for three minutes, was not checked after recording the time, and may have been 5<sup>s</sup> in error.

(b) 'Not good; perhaps a few seconds late.' (B.) The observer's eye was fatigued by the glare of the Moon's light during long counting. The times of Disappearance and Reappearance in the Nautical Almanac are both about 2<sup>m</sup> earlier than the observed times. T's observation was uncertain on account of the faintness of the star, which was a little separated from the Limb when first seen.

(c) The Transit clock was at this time 62<sup>s</sup>,68 slow by the observations of Clock-stars on May 1 and 3.

(d) The Transit Clock was at this time 34<sup>s</sup>,28 slow by C's observations of Clock-stars on July 3, 4 and 5.

(e) 'Very uncertain: the star seemed very close to the Limb when last seen, and I could not be sure of seeing it longer.' (T.) The Moon was nearly full, and the Limb was waving.

(f) 'Very good, but the star unsteady.' (B.) 'Very exact.' (T.)

The following are the Comparisons of Chronometers with the Transit Clock, used in the calculation of the foregoing occultations. The letter *H* is an abbreviation for Hardy, the Transit Clock; and *U* and *X* are sidereal Chronometers each beating half-seconds.

Day of Observation.	Clock.	Clock Time.	Chron.	Chronometer Time.	Day of Observation.	Clock.	Clock Time.	Chron.	Chronometer Time.
1852.		<i>h. m. s.</i>		<i>h. m. s.</i>	1852.		<i>h. m. s.</i>		<i>h. m. s.</i>
Feb. 3	H.	3.33.30,0	X.	3.34.51,9	July 4	H.	20.13.48,0	X.	20.14.30,0
3	H.	3.38.56,0	U.	3.40.28,7	30	H.	18.57.37,0	X.	18.58.57,6
3	H.	4.39.32,0	X.	4.40.54,0	30	H.	18.58.5,0	X.	18.59.25,7
3	H.	4.49.18,0	U.	4.50.51,0	Aug. 26	H.	20.38.35,0	X.	20.40.18,5
3	H.	4.49.47,0	U.	4.51.19,9	26	H.	21.11.21,0	X.	21.13.4,5
May 2	H.	16.5.34,0	X.	16.6.4,5	26	H.	21.2.49,0	U.	20.38.56,0



Disappearance of 63 Geminorum, Feb. 3, 6<sup>h</sup>.37<sup>m</sup>.29<sup>s</sup>.03 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$52.33.57,00 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$108.54.34,80 + 0,6278 \times (t + \tau) + x$
Moon's Geocentric N.P.D. ....	$67.38.48,40 + 0,0222 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$58.42,89 \times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	$15.59,99 \times (1 + 0,001 n)$
Star's Right Ascension in arc .....	$109.44.23,70 + e$
Star's N.P.D.....	$68.15.26,90 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$
Moon's apparent Right Ascension in arc.....	$109.27.13,71 + \delta R$
Moon's apparent N.P.D.....	$68.14.20,92 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.10,07 + \delta S$
Apparent Distance of Star from Moon's centre	$15.58,93 + \delta D$

$$\delta R = + 0,5378t + 0,6316\tau + 1,0062x - 0,0039y + 1,9712m + 0,0122v$$

$$\delta \lambda = - 0,0250t + 0,0245\tau + 0,0033x + 1,0104y + 2,1581m - 0,0126v$$

$$\delta S = + 0,0006t + 0,9701n$$

$$\delta D = - 0,9266\delta R + 0,9266e - 0,0679\delta \lambda + 0,0697f.$$

Final Equation:

$$+ 11'',14 = -0,9326x - 0,0650y + 0,9266e + 0,0697f - 0,4972t - 0,5869\tau - 0,0105v - 1,9730m - 0,9701n.$$

Reappearance of 63 Geminorum, Feb. 3, 7<sup>h</sup>.44<sup>m</sup>.22<sup>s</sup>.62 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$69.20.5,70 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$109.36.39,45 + 0,6299 \times (t + \tau) + x$
Moon's Geocentric N.P.D. ....	$67.40.22,93 + 0,0249 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$58.45,15 \times [9,999096] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	$16.0,60 \times (1 + 0,001 n)$
Star's Right Ascension in arc .....	$109.44.23,70 + e$
Star's N.P.D. ....	$68.15.26,90 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$
Moon's apparent Right Ascension in arc.....	$110.2.5,19 + \delta R$
Moon's apparent N.P.D. ....	$68.13.7,15 + \delta \lambda$
Moon's apparent Semidiameter.....	$16.12,70 + \delta S$
Apparent Distance of Star from Moon's centre	$16.35,70 + \delta D$

$$\delta R = + 0,5048t + 0,6352\tau + 1,0087x - 0,0031y + 1,5390m + 0,0096v$$

$$\delta \lambda = - 0,0118t + 0,0269\tau + 0,0026x + 1,0126y + 1,9909m - 0,0137v$$

$$\delta S = + 0,0005t + 0,9727n$$

$$\delta D = + 0,9195\delta R - 0,9195e - 0,1394\delta \lambda + 0,1413f.$$

Final Equation:

$$-23'',00 = +0,9272x - 0,0140y - 0,9195e + 0,1413f + 0,4653t + 0,5804\tau + 0,0107v + 1,1376m - 0,9727n.$$

It is probable from this result that the time of observation was too late.

Disappearance of 94 Virginis, May 2, 13<sup>h</sup>. 9<sup>m</sup>. 59<sup>s</sup>. 47 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	238°. 40'. 59''. 70 + 15''. 0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	209°. 45'. 49. 50 + 0,5895 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	97°. 5'. 22. 50 + 0,2373 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	61°. 6. 25 $\times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	16°. 39. 06 $\times (1 + 0,001n)$
Star's Right Ascension in arc .....	209°. 37'. 16. 65 + $e''$
Star's N.P.D. ....	98°. 11'. 0. 80 + $f$
Geocentric Colatitude of the Observatory .....	37°. 58'. 20. 37 + $\nu$
Moon's apparent Right Ascension in arc .....	209°. 27'. 21. 95 + $\delta R$
Moon's apparent N.P.D. ....	97°. 57'. 31. 18 + $\delta \lambda$
Moon's apparent Semidiameter .....	16°. 46. 74 + $\delta S$
Apparent Distance of Star from Moon's centre	16°. 41. 09 + $\delta D$

$$\delta R = +0,4493t + 0,5951\tau + 1,0097x - 0,0007y - 1,1183m - 0,0070\nu$$

$$\delta \lambda = +0,2499t + 0,2387\tau - 0,0007x + 1,0076y + 3,1522m - 0,0092\nu$$

$$\delta S = +0,0004t + 1,0067n$$

$$\delta D = -0,5824\delta R + 0,5824e - 0,8089\delta \lambda + 0,8086f.$$

Final Equation :

$$+5'',65 = -0,5874x - 0,8146y + 0,5824e + 0,8086f - 0,4641t - 0,5396\tau + 0,0115\nu - 1,8985m - 1,0067n.$$

Reappearance of 29 Aquarii, July 4, 13<sup>h</sup>. 18<sup>m</sup>. 40<sup>s</sup>. 07 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	302°. 57'. 16''. 20 + 15''. 0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	328°. 35'. 53. 25 + 0,5299 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	106°. 51'. 7. 20 - 0,1485 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	55°. 59. 05 $\times [9,999096] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	15°. 15. 31 $\times (1 + 0,001n)$
Star's Right Ascension in arc .....	328°. 35'. 26. 40 + $e''$
Star's N.P.D. ....	107°. 40'. 18. 70 + $f$
Geocentric Colatitude of the Observatory .....	37°. 58'. 20. 37 + $\nu$
Moon's apparent Right Ascension in arc .....	328°. 51'. 34. 69 + $\delta R$
Moon's apparent N.P.D. ....	107°. 42'. 29. 33 + $\delta \lambda$
Moon's apparent Semidiameter .....	15°. 19. 72 + $\delta S$
Apparent Distance of Star from Moon's centre	15°. 31. 66 + $\delta D$

$$\delta R = +0,3920t + 0,5347\tau + 1,0095x + 0,0014y + 0,9504m + 0,0059\nu$$

$$\delta \lambda = -0,1298t - 0,1499\tau - 0,0013x + 1,0047y + 3,0962m - 0,0061\nu$$

$$\delta S = +0,0003t + 0,9197n$$

$$\delta D = +0,9434\delta R - 0,9434e + 0,1392\delta \lambda - 0,1406f.$$

Final Equation :

$$-11'',94 = +0,9521x + 0,1412y - 0,9434e - 0,1406f + 0,3515t + 0,4836\tau + 0,0047\nu + 1,3275m - 0,9197n.$$



Disappearance of 17 Capricorni, July 30, 10<sup>h</sup>. 17<sup>m</sup>. 41<sup>s</sup>. 17 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	283 . 12 . 44,10 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	308 . 51 . 32,70 + 0,5772 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	111 . 12 . 21,19 - 0,0938 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	56 . 44,97 $\times [9,999096] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15 . 27,84 $\times (1 + 0,001 n)$
Star's Right Ascension in arc.....	309 . 24 . 17,85 + $e''$
Star's N.P.D. ....	112 . 2 . 44,30 + $f$
Geocentric Colatitude of the Observatory .....	37 . 58 . 20,37 + $\nu$
Moon's apparent Right Ascension in arc.....	309 . 7 . 52,85 + $\delta R$
Moon's apparent N.P.D. ....	112 . 5 . 31,08 + $\delta \lambda$
Moon's apparent Semidiameter.....	15 . 31,28 + $\delta S$
Apparent Distance of Star from Moon's centre	15 . 27,94 + $\delta D$

$$\delta R = + 0,4342t + 0,5827\tau + 1,0099x + 0,0019y + 0,9899m + 0,0062\nu$$

$$\delta \lambda = - 0,0699t - 0,0951\tau - 0,0017x + 1,0036y + 3,2008m - 0,0050\nu$$

$$\delta S = + 0,0003t + 0,9313n$$

$$\delta D = - 0,9117\delta R + 0,9117e + 0,1789\delta \lambda - 0,1806f.$$

Final Equation :

$$-3'',34 = -0,9210x + 0,1778y + 0,9116e - 0,1806f - 0,4086t - 0,5482\tau - 0,0065\nu - 0,3300m - 0,9313n.$$

Disappearance of B.A.C. 7049, Aug. 26, 10<sup>h</sup>. 39<sup>m</sup>. 34<sup>s</sup>. 41 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	315 . 18 . 41,25 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	305 . 6 . 18,30 + 0,5754 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	111 . 49 . 16,02 - 0,0814 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	56 . 30,20 $\times [9,999096] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter.....	15 . 23,86 $\times (1 + 0,001 n)$
Star's Right Ascension in arc.....	305 . 13 . 4,20 + $e''$
Star's N.P.D. ....	112 . 52 . 32,40 + $f$
Geocentric Colatitude of the Observatory .....	37 . 58 . 20,37 + $\nu$
Moon's apparent Right Ascension in arc.....	304 . 59 . 36,71 + $\delta R$
Moon's apparent N.P.D. ....	112 . 43 . 27,17 + $\delta \lambda$
Moon's apparent Semidiameter.....	15 . 27,84 + $\delta S$
Apparent Distance of Star from Moon's centre	15 . 22,71 + $\delta D$

$$\delta R = + 0,4191t + 0,5817\tau + 1,0108x - 0,0008y - 0,4059m - 0,0025\nu$$

$$\delta \lambda = - 0,0716t - 0,0821\tau - 0,0007x + 1,0042y + 3,2649m - 0,0044\nu$$

$$\delta S = + 0,0001t + 0,9278n$$

$$\delta D = - 0,7437\delta R + 0,7437e - 0,5915\delta \lambda + 0,5903f.$$

Final Equation :

$$+5'',13 = -0,7513x - 0,5934y + 0,7437e + 0,5903f - 0,2695t - 0,3840\tau - 0,0007\nu - 1,6293m - 0,9278n.$$





APPARENT RIGHT ASCENSIONS

OBSERVED WITH

THE TRANSIT

IN THE YEAR 1853.

Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.											
Jan. 3	Procyon.....	14,2	28,0	41,2	55,0	8,8	22,1	35,6	7.30.54,99	-18,2	-1,8	+12,5	53,93	42,76	1,72				B.
	(a) ε Hydræ.....	....	....	....	18,0	31,6	44,8	58,2	8.38.17,78				16,71	42,81					B.
Jan. 5	⊙ 1 L.....	8,7	23,6	37,9	52,7	7,5	22,0	36,6	19.3.52,71				51,86		1,61	19.4.37,19			C.
	⊙ 2 L.....	30,4	45,1	59,3	14,1	29,0	43,4	58,0	19.6.14,18				13,33			19.6.58,66			C.
	α Pegasi.....	59,0	12,7	26,4	40,6	54,6	8,2	22,2	22.56.40,52				39,31	45,53		22.57.24,90			C.
	Calliope.....	....	....	26,0	40,4	56,2	10,1	25,1	4.26.40,42				39,06			4.27.25,02			B.
	Rigel.....	2,8	16,6	29,8	43,7	57,6	10,8	24,4	5.6.43,67				42,82	46,04		5.7.28,82			B.
	β Tauri.....	29,6	45,2	0,1	15,7	31,2	46,2	1,7	5.16.15,67				14,27	46,05		5.17.0,28			B.
Jan. 6	Rigel.....	1,2	15,0	28,3	42,3	56,0	9,3	22,8	5.6.42,13				41,28	47,58	1,53	5.7.28,84			B.
	β Tauri.....	28,2	43,6	58,7	14,2	29,8	44,8	0,0	5.16.14,18				12,78	47,55		5.17.0,35			B.
	α Orionis.....	46,0	59,6	12,9	26,7	40,3	53,8	7,3	5.46.26,66				25,57	47,58		5.47.13,17			B.
Jan. 7	(c) Hygeia.....	....	....	....	25,0	40,0	55,2	8,2	3.56.25,10				23,81		1,47	3.57.12,79			B.
	Aldebaran.....	59,6	13,5	27,4	41,7	55,9	9,7	23,6	4.26.41,62				40,44	48,96					B.
	Rigel.....	59,8	13,3	26,8	40,7	54,6	7,8	21,3	5.6.40,61				39,76	49,10					B.
Jan. 8	⊙ 1 L.....	12,6	27,4	41,5	56,4	11,3	25,5	40,0	19.16.56,39				55,59		1,44	19.17.45,46			C.
	⊙ 2 L.....	34,0	48,4	2,7	17,5	32,4	46,6	1,2	19.19.17,55				16,75			19.20.6,62			C.
	(d) α Ceti.....	5,7	19,4	32,7	46,3	0,1	13,4	26,8	2.53.46,34				45,30	50,35		2.54.35,62			C.
	(c) Hygeia.....	....	36,8	51,0	5,7	19,9	34,6	....	3.56.5,60				4,32			3.56.54,74			B.
	(e) Aldebaran.....	....	....	....	54,4	8,2	22,3	....	4.26.40,22				39,04	50,36		4.27.29,46			C.
	Rigel.....	58,4	12,0	25,5	39,3	53,1	6,3	19,9	5.6.39,22				38,37	50,49		5.7.28,83			C.
	β Tauri.....	25,3	40,7	55,8	11,2	26,8	42,0	57,0	5.16.11,25				9,85	50,48		5.17.0,35			B.
	Castor.....	36,3	52,3	8,0	24,1	40,2	56,0	11,9	7.24.24,11				22,62	50,61		7.25.13,24			B.
	Procyon.....	6,6	20,2	33,4	47,3	0,7	14,2	27,7	7.30.47,16				46,10	50,65		7.31.36,73			B.
Jan. 11	(f) ⊙ 1 L.....	11,7	26,3	40,7	55,3	10,0	24,4	39,0	19.29.55,34				54,54		1,50	19.30.48,94			B.
	⊙ 2 L.....	....	47,2	1,3	16,0	31,0	45,2	....	19.32.16,14				15,34			19.33.9,74			B.
Jan. 12	α Herculis.....	16,8	30,7	44,6	58,7	12,7	26,3	40,2	17.6.58,58		-2,1		57,38	57,49	1,49	17.7.54,77			T.
	α Ophiuchi.....	27,2	41,0	54,7	8,7	22,7	36,1	49,8	17.27.8,60				7,44	57,32		17.28.4,86			T.
Jan. 13	⊙ 1 L.....	48,4	3,1	17,2	32,0	46,6	1,1	15,3	19.38.31,95				31,13			19.39.28,68			T.
	⊙ 2 L.....	8,7	23,2	37,6	52,4	7,0	21,2	35,7	19.40.52,25				51,43			19.41.48,98			T.
	α Ceti.....	....	11,7	25,0	38,7	52,3	5,7	19,1	2.53.38,68				37,62	57,98		2.54.35,62			T.
Jan. 14	⊙ 2 L.....	25,9	40,6	54,7	9,3	24,1	38,2	52,8	19.45.9,38				8,56		1,59	19.46.7,56			T.
	(g) H.C. 5157.....	33,7	47,4	1,3	15,7	30,0	43,7	57,7	2.38.15,64				14,42			2.39.13,88			T.
	B. (w.) 11.746....	46,2	0,2	13,7	27,7	41,7	55,3	9,1	2.42.27,70				26,52			2.43.25,98			T.
	B. (w.) 11.789....	11,9	25,9	39,4	53,6	7,7	21,3	35,1	2.44.53,56				52,37			2.45.51,83			T.
	H. C. 5456.....	59,2	13,2	27,0	41,2	55,7	9,6	23,7	2.48.41,37				40,15			2.49.39,62			T.
	α Ceti.....	56,7	10,2	23,6	37,1	50,7	4,2	17,4	2.53.37,13				36,07	59,51		2.54.35,54			T.
	(d)(h) Aldebaran.....	49,0	2,9	16,7	31,2	45,3	59,2	13,1	4.26.31,05				29,85	59,52		4.27.29,43			T.
	(d)(h) Sirius.....	59,7	14,0	27,8	42,1	56,3	9,9	24,1	6.37.41,98				41,15	59,73		6.38.40,87			T.
Jan. 15	(d) α Ceti.....	55,1	8,6	....	....	49,1	2,3	15,8	2.53.35,45				34,39	61,18	1,66	2.54.35,55			T.
	(d) Castor.....	....	....	57,3	13,4	29,5	45,1	1,0	7.24.13,36				11,84	61,47		7.25.13,31			T.
	Procyon.....	55,7	9,3	22,7	36,3	50,1	3,4	16,8	7.30.36,36				35,29	61,53		7.31.36,77			T.
	Pollux.....	33,3	48,6	3,8	19,2	34,9	49,8	5,0	7.35.19,23				17,82	61,46		7.36.19,31			T.
Jan. 17	⊙ 1 L.....	....	8,1	....	....	....	5,6	....	19.55.36,86		-1,9		36,05		1,61	19.56.39,87			T.
	⊙ 2 L.....	....	....	....	....	....	25,0	39,7	19.57.56,31				55,50			19.58.59,32			T.
	α Herculis.....	9,3	23,1	37,0	51,2	5,1	18,8	32,7	17.6.51,02				49,84	65,15		17.7.55,08			T.
Jan. 18	⊙ 1 L.....	7,4	22,1	36,3	51,1	5,4	19,6	34,1	19.59.50,85				50,04			20.0.55,47			T.
	⊙ 2 L.....	26,9	41,4	55,7	10,2	24,9	39,1	53,4	20.2.10,22				9,41			20.3.14,84			T.
	B. (w.) 1.801....	5,1	18,7	32,1	46,0	0,1	13,3	26,8	1.43.46,02	-5,0			45,80			1.44.51,62			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) Nearly invisible from cloud. (b) C's observations on this day are corrected by -0<sup>s</sup>.03 for difference of personal equation of C and B. See Introduction. (c) Too faint for satisfactory observation. (d) Cloudy. (e) Wire V. was set down 16,4, not being taken from the clock. (f) Motion. No clock-stars could be observed. (g) 'A brighter lower in the field.' (h) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	
Jan. 18	$\alpha$ Arietis.....	3,7	18,1	32,7	47,3	2,3	16,5	31,1	1. 57. 47,39	-5,0	-1,9	+12,5	47,06	65,87	1,61	1. 58. 52,89	T.
	H. C. 8249.....	7,3	21,6	35,2	49,7	3,8	17,7	31,7	4. 14. 49,58				49,29			4. 15. 55,28	T.
	H. C. 8362.....	26,1	40,0	53,7	8,0	21,9	35,6	49,8	4. 18. 7,87				7,59			4. 19. 13,58	T.
	81 Tauri.....	28,2	42,2	56,0	10,1	24,2	38,1	52,1	4. 21. 10,12				9,84			4. 22. 15,83	T.
	Aldebaran.....	41,3	55,3	9,3	23,7	37,8	51,7	5,7	4. 26. 23,54				23,26	66,07		4. 27. 29,26	T.
	$\alpha$ Orionis.....	26,7	40,2	53,5	7,2	21,1	34,4	47,9	5. 46. 7,29				7,08	66,07		5. 47. 13,17	T.
Jan. 19	$\alpha$ Aquilæ.....	45,2	58,8	12,1	26,2	39,8	53,2	6,7	19. 42. 26,00				25,78	68,76	1,57	19. 43. 34,52	T.
Jan. 20	(a) $\odot$ 1 L.....	33,1	47,2	1,6	16,1	....	44,6	59,2	20. 8. 16,06				16,19			20. 9. 24,96	T.
	(a) $\odot$ 2 L.....	51,9	6,2	20,2	35,1	49,7	3,8	18,2	20. 10. 35,01				35,14			20. 11. 43,91	T.
	Aldebaran.....	38,2	52,3	6,2	20,3	34,7	48,3	2,3	4. 26. 20,32				20,04	69,28		4. 27. 29,35	T.
	(b) Rigel.....	38,7	52,2	5,7	19,6	....	....	....	5. 6. 19,49				19,52	69,29		5. 7. 28,87	T.
	(b) $\beta$ Tauri.....	5,3	20,7	35,7	51,3	6,9	22,0	37,2	5. 15. 51,30				50,89	69,40		5. 17. 0,26	T.
	(b) $\alpha$ Orionis.....	23,2	36,7	50,2	4,0	17,7	31,1	44,5	5. 46. 3,91				3,70	69,45		5. 47. 13,10	T.
	(b)(c) Castor.....	16,6	32,6	48,2	4,3	20,4	36,1	52,0	7. 24. 4,31				3,85	69,51		7. 25. 13,36	T.
	Procyon.....	47,0	0,6	13,7	27,6	41,3	54,5	8,1	7. 30. 27,55				27,37	69,49		7. 31. 36,88	T.
	(d) Pollux.....	24,3	38,6	54,7	10,3	25,8	40,7	56,0	7. 35. 10,20				9,80	69,54		7. 36. 19,32	T.
Jan. 21	H. C. 7767.....	16,1	31,0	45,3	0,3	15,2	29,8	44,7	4. 2. 0,34				0,00		1,50	4. 3. 10,82	T.
	H. C. 7904.....	....	55,1	9,7	24,6	39,7	54,1	....	4. 5. 24,64				24,30			4. 6. 35,13	T.
	H. C. 7999.....	35,7	50,1	4,3	19,2	34,0	48,3	2,8	4. 8. 19,20				18,88			4. 9. 29,71	T.
	(e) H. C. 8122.....	1,5	15,3	29,6	43,8	58,2	....	26,0	4. 11. 43,78				43,49			4. 12. 54,32	T.
	(b) $\kappa$ Tauri.....	42,7	57,2	11,6	26,4	41,0	55,2	9,7	4. 15. 26,26				25,94			4. 16. 36,78	T.
	(b) $\epsilon$ Tauri.....	9,0	23,3	37,3	51,7	6,2	20,2	34,2	4. 18. 51,70				51,39			4. 20. 2,23	T.
	H. C. 8546.....	41,2	55,8	10,2	25,3	40,2	54,7	9,3	4. 23. 25,24				24,90			4. 24. 35,75	T.
	Aldebaran.....	36,8	50,7	4,7	18,9	33,1	46,7	0,7	4. 26. 18,80				18,52	70,79		4. 27. 29,37	T.
	(b) H. C. 8798.....	46,2	0,7	14,7	29,7	44,1	58,3	....	4. 31. 29,46				29,13			4. 32. 39,98	T.
	H. C. 8917.....	15,2	30,1	44,8	0,1	15,2	29,8	44,8	4. 36. 0,00				59,64			4. 37. 10,50	T.
	H. C. 9008.....	6,6	20,9	35,1	49,7	4,3	18,4	32,9	4. 38. 49,70				49,38			4. 40. 0,24	T.
	$\iota$ Tauri.....	53,7	7,9	21,7	36,2	50,7	4,6	18,9	4. 41. 36,24				35,93			4. 42. 46,80	T.
	(b) H. C. 9220.....	17,7	32,2	46,9	1,8	16,8	31,2	46,0	4. 46. 1,80				1,46			4. 47. 12,33	T.
	(b) H. C. 9331.....	44,1	59,0	13,2	28,2	43,1	57,7	12,1	4. 49. 28,20				27,86			4. 50. 38,73	T.
	H. C. 9411.....	....	18,0	31,7	45,7	0,0	13,7	....	4. 51. 45,82				45,53			4. 52. 56,41	T.
	H. C. 9517.....	23,3	37,6	51,3	5,7	20,1	34,0	48,1	4. 55. 5,73				5,44			4. 56. 16,32	T.
	B.A.C. 1577.....	25,3	40,7	55,8	11,2	26,8	41,8	57,0	4. 58. 11,23				10,84			4. 59. 21,72	T.
	H. C. 9704.....	8,3	23,7	38,3	54,2	9,7	25,0	40,1	5. 0. 54,18				53,77			5. 2. 4,65	T.
	(f) H. C. 9786.....	31,2	46,2	1,1	16,1	31,3	46,0	0,9	5. 4. 16,12				15,76			5. 5. 26,65	T.
	(e) H. C. 9887.....	49,3	4,0	18,2	33,0	47,5	1,9	16,2	5. 8. 32,87				32,54			5. 9. 43,43	T.
	(g) $\beta$ Tauri.....	4,0	19,2	34,3	49,7	5,3	20,2	35,8	5. 15. 49,79				49,39	70,90		5. 17. 0,29	T.
	(g) Sirius.....	47,7	1,5	15,3	30,0	44,2	57,7	11,8	6. 37. 29,74				29,85	71,03		6. 38. 40,84	T.
	(b) Procyon.....	45,3	59,2	12,2	26,1	39,7	53,0	6,6	7. 30. 26,01				25,83	71,04		7. 31. 36,87	T.
	Pollux.....	22,9	38,2	53,2	8,7	24,3	39,2	54,6	7. 35. 8,73				8,24	71,01		7. 36. 19,39	T.
	$\alpha$ Aquilæ.....	42,2	55,8	9,2	23,1	37,0	50,2	3,8	19. 42. 23,04				22,83	71,73	1,48	19. 43. 34,61	T.
Jan. 22	$\odot$ 1 L.....	....	11,1	25,2	39,6	54,2	8,2	....	20. 16. 39,66				39,78			20. 17. 51,59	T.
	$\odot$ 2 L.....	15,1	29,5	43,7	58,2	12,7	26,7	40,8	20. 18. 58,10				58,23			20. 20. 10,04	T.
	$\alpha$ Ceti.....	43,2	56,4	9,7	23,4	37,2	50,4	3,8	2. 53. 23,44				23,28	72,21		2. 54. 35,50	T.
	Aldebaran.....	35,2	49,3	3,2	17,4	31,6	45,3	59,2	4. 26. 17,32				17,04	72,26		4. 27. 29,35	T.
	(h) Rigel.....	35,2	49,1	2,4	16,5	30,1	43,6	57,1	5. 6. 16,29				16,32	72,47		5. 7. 28,68	T.
	(b) $\beta$ Tauri.....	....	17,7	32,8	48,3	3,8	19,0	....	5. 15. 48,32				47,92	72,36		5. 17. 0,29	T.
Jan. 25	Aldebaran.....	30,7	44,5	58,3	12,7	26,8	40,7	54,7	4. 26. 12,63				12,48	76,79	1,54	4. 27. 29,30	T.
	(e) Rigel.....	30,7	44,6	58,0	11,8	25,4	39,0	52,5	5. 6. 11,71				11,90	76,86		5. 7. 28,76	T.
	(e) $\beta$ Tauri.....	57,7	13,1	28,1	43,7	59,2	14,2	29,4	5. 15. 43,63				43,34	76,91		5. 17. 0,21	T.
Jan. 27	$\odot$ 1 L.....	....	55,5	9,5	24,1	38,5	52,3	....	20. 37. 23,98				24,28			20. 38. 43,68	T.
	$\odot$ 2 L.....	58,7	13,0	27,0	41,7	55,9	10,0	24,1	20. 39. 41,48				41,78			20. 41. 1,18	T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Interruption by cloud: both limbs very unsteady.  
A fine lunar halo.  
on account of cloud.

(e) Extremely faint from cloud.

(b) Cloudy.

(f) Barely seen.

(c) Faint.

(g) Dense cloud.

(d) The sky completely covered with white clouds.

(h) Barely seen at most of the wires



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.											
Jan. 31	⊙ 1 L.....	2,3	16,2	30,4	44,9	59,2	13,1	27,2	20.53.44,76	-5,0	-1,3	+15,0	45,07		1,77	20.55.10,98	T.		
	⊙ 2 L.....	18,8	33,0	46,9	1,3	15,5	29,6	43,7	20.56.1,25				1,55	20.57.27,47		T.			
	α Ceti.....	28,7	42,1	55,4	9,2	22,8	36,0	49,6	2.53.9,12				9,11	86,26		2.54.35,47	T.		
	Rigel.....	21,3	34,7	48,2	2,1	15,7	29,2	42,7	5.6.1,98				2,17	86,53		5.7.28,69	T.		
	β Tauri.....	47,8	3,2	18,4	33,8	49,7	4,4	19,7	5.15.33,85				33,56	86,64		5.17.0,09	T.		
	(a) δ Ursæ Min. SP. ....			57,7	46,0	37,8	22,0	9,0	6.17.48,05				5,93						
	(b) Sirius.....	31,7	45,7	59,7	13,9	28,2	42,1	55,6	6.37.13,88				14,16	86,68		6.38.40,79	T.		
	ε Hydræ.....	52,7	6,1	19,6	33,3	47,1	0,6	13,7	8.37.33,30				33,25	86,67		8.39.0,03	T.		
Feb. 1	(c) β Tauri.....	46,3	1,7	16,7	32,2	47,7	2,6	18,2	5.15.32,20				31,91	88,28	1,72	5.17.0,22	T.		
	(d) α Orionis.....	4,2	17,7	31,2	45,0	58,7	11,9	25,2	5.45.44,84				44,78	88,30		5.47.13,12	T.		
	(e) Sirius.....	29,8	44,1	57,7	12,2	26,3	40,2	54,2	6.37.12,07				12,35	88,48		6.38.40,76	T.		
Feb. 2	⊙ 1 L.....	8,0	21,7	35,6	50,1	4,3	18,1	32,3	21.1.50,01				50,30		1,66	21.3.19,70	T.		
	⊙ 2 L.....		37,3	51,8	6,0	20,3	34,2		21.4.5,92				6,21			21.5.35,61	T.		
	α Arietis.....	39,2	53,9	8,3	23,2	37,9	52,3	6,7	1.57.23,07				22,87	89,84		1.58.52,61	T.		
	Aldebaran.....	17,5	31,6	45,2	59,3	13,7	27,3	41,3	4.25.59,42				59,27	89,90		4.27.29,18	T.		
	Rigel.....	17,7	31,3	44,9	58,7	12,5	25,8	39,3	5.5.58,60				58,79	89,88		5.7.28,74	T.		
	β Tauri.....	44,5	59,7	14,7	30,6	46,1	1,1	16,2	5.15.30,41				30,12	90,05		5.17.0,09	T.		
	δ Ursæ Min. SP. ....	24,5	9,5	53,5	43,0	33,5	17,0	3,0	6.17.48,43				1,31						
	(f) Sirius.....	28,2	42,7	56,3	10,6	24,8	38,6	52,6	6.37.10,54				10,82	90,00		6.38.40,88	T.		
Feb. 5	(g) ⊙ 1 L.....	10,3	24,2	38,2	52,6	6,7	20,6	34,4	21.13.52,43				52,72			21.15.27,11	T.		
	⊙ 2 L.....		39,7	53,3	7,7	21,9	35,8		21.16.7,68		-1,3		7,97			21.17.42,36	T.		
Feb. 11	(h) ⊙ 1 L.....		7,7	21,0	35,2	49,1	2,9	16,7	21.37.35,15			+13,7	35,33		1,68	21.39.19,21	B.		
	⊙ 2 L.....	7,4	21,2	35,0	49,0	3,1	16,9	30,6	21.39.49,03				49,21			21.41.33,09	B.		
Feb. 14	H. C. 11041.....	25,1	39,1	53,2	7,8	22,1	35,9	50,0	5.40.7,60			-1,1	7,40		1,70	5.41.56,88	B.		
	(i) B.A.C. 1867.....	2,8	17,0	31,0	45,8	0,2	14,2	28,7	5.42.45,67				45,45			5.44.34,94	B.		
	α Orionis.....	42,8	56,3	9,8	23,6	37,3	50,6	4,2	5.45.23,51				23,40	109,54		5.47.12,89	B.		
	H. C. 11349.....	45,7	0,2	14,6	29,3	44,1	58,4	13,1	5.50.29,35				29,11			5.52.18,61	B.		
	H. C. 11839.....	21,9	36,0	49,8	4,2	18,6	32,6	46,7	6.4.4,26				4,06			6.5.53,57	B.		
	(k) H. C. 11930.....	56,1	10,4	24,8	39,6	54,3	8,6	23,1	6.6.39,56				39,34			6.8.28,85	B.		
	H. C. 12053.....	12,1	26,3	40,8	55,3	10,0	24,2	38,8	6.9.55,36				55,13			6.11.44,65	B.		
	H. C. 12166.....	15,2	29,2	43,2	57,7	11,9	25,8	40,0	6.12.57,57				57,38			6.14.46,90	B.		
	H. C. 12262.....	1,3	15,6	29,6	44,1	58,3	12,4	26,7	6.15.44,00				43,79			6.17.33,32	B.		
	H. C. 12348.....	22,3	37,3	52,2	7,7	23,0	37,8	53,0	6.18.7,62				7,33			6.19.56,86	B.		
	H. C. 12483.....	14,3	29,8	44,7	0,2	15,9	30,9	45,9	6.22.0,24				59,94			6.23.49,47	B.		
	B.A.C. 2173.....	49,0	3,1	17,2	32,0	46,2	0,6	14,8	6.29.31,84				31,62			6.31.21,16	B.		
	H. C. 12932.....	37,6	52,2	6,4	21,4	36,1	50,8	5,2	6.34.21,38				21,14			6.36.10,69	B.		
	(l) Sirius.....	8,7	22,7	36,4	50,9	5,2	18,7	33,1	6.36.50,81				51,01	109,70		6.38.40,56	B.		
	B.A.C. 2243.....	29,6	44,3	59,1	14,2	29,6	44,1	59,0	6.42.14,27				14,01			6.44.3,57	B.		
	B.A.C. 2265.....	12,0	26,1	40,0	54,2	8,8	22,7	36,8	6.45.54,37				54,17			6.47.43,73	B.		
	H. C. 13688.....	24,1	38,3	52,7	7,4	22,0	36,1	50,7	6.55.7,33				7,10			6.56.56,67	B.		
	(m) * N.P.D. 70°.42' ..	52,2	6,7	21,0	35,2	49,8	3,8	18,1	6.58.35,26				35,05			7.0.24,70	B.		
	B.A.C. 2363.....	54,5	9,3	24,0	39,2	54,2	8,8	23,6	7.3.39,09				38,84			7.5.28,42	B.		
	H. C. 14393.....	22,1	36,3	50,8	5,2	19,9	34,0	48,3	7.15.5,23				5,01			7.16.54,61	B.		
	H. C. 14515.....	54,8	8,7	22,5	36,7	50,8	4,3	18,3	7.18.36,59				36,41			7.20.26,01	B.		
	(n) Castor.....	36,6	52,4	8,0	24,2	40,3	56,1	11,9	7.23.24,21				23,84	109,51		7.25.13,45	B.		
	Procyon.....		20,1	33,4	47,3	1,2	14,3	27,9	7.29.47,27				47,18	109,68		7.31.36,79	B.		
	(o) Pollux.....			14,7	30,0	45,7	0,9	16,0	7.34.30,17				29,87	109,49		7.36.19,49	B.		
Feb. 15	(p) ⊙ 1 L.....	26,2	40,2	54,0	8,0	22,0	35,8	49,3	21.53.7,93				8,11		1,69	21.54.58,74	B.		
	⊙ 2 L.....	39,7	53,5	7,2	21,2	35,2	48,7	2,3	21.55.21,11				21,29			21.57.11,93	B.		
	(q) B.A.C. 1388.....	6,7	21,0				18,3	31,9	4.19.49,49				49,27			4.21.40,36	B.		
	(q) Aldebaran.....	56,1	10,0	23,9	38,1	52,2	6,1	20,0	4.25.38,06				37,87	111,11			B.		
	(r) Rigel.....		10,1	23,3	37,3	51,1			5.5.37,24				37,36	111,13			B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40°.349, - 26°.905, - 13°.633, + 0°.010, + 13°.656, + 26°.895, + 40°.327.

Feb. 15, 22<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) Good observation: the star steady. (b) Flashing. (c) Fog and bad definition. (d) Much diffused. (e) Irregular motion and no definition; exact observation not practicable. (f) Faint at times from cloud. (g) Unsteady and much fringed. (h) Clouds passing. No stars could be observed at this time. (i) 'A brighter following.' (j) 'One preceding.' (k) Blazing. (l) 'One follows,' viz. H. C. 13818, the star intended to be observed. (m) The noted times have been increased 1<sup>m</sup>. (n) Obscured by cloud. (o) Occasionally faint. (p) Faint from cloud. (r) Dense cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Feb. 16	(a) ☉ 1 L.....	17,7	31,6	45,0	59,0	13,0	26,7	40,3	21. 57. 59,05	-5,0	-1,1	+13,7	59,22		1,37	21. 58. 51,63			B.
	☉ 2 L.....	30,8	44,4	58,0	12,1	26,0	39,7	53,6	22. 0. 12,08				12,25			22. 1. 4,67			B.
	α Andromedæ...	8,0	23,1	38,1	53,9	9,1	24,2	39,7	23. 59. 53,73				53,43	52,55		0. 0. 45,96			B.
	H. C. 8001.....	57,1	12,1	27,0	41,9	57,0	11,3	26,1	4. 8. 41,78				41,53			4. 9. 34,30			B.
	(b) B. (w.) iv. 356..	9,1	23,0	36,8	50,7	5,1	18,8	32,8	4. 16. 50,90				50,72			4. 17. 43,50			B.
	B.A.C. 1388.....	5,1	19,3	33,3	48,1	2,2	16,3	30,8	4. 20. 47,87				47,65			4. 21. 40,43			B.
	H. C. 8546.....	58,7	13,3	28,0	43,0	57,9	12,2	26,9	4. 23. 42,85				42,60			4. 24. 35,38			B.
	Rigel.....	54,8	8,4	21,8	35,7	49,3	2,7	16,3	5. 6. 35,57				35,69	52,79		5. 7. 28,51			B.
	δ Ursæ Min. SP.	7,5	52,7	35,8	24,8	15,8	....	....	6. 18. 25,80				42,55			....			B.
	B.A.C. 2154.....	49,7	4,7	19,0	34,0	49,1	3,8	18,6	6. 27. 34,13				33,88			6. 28. 26,78			B.
	B.A.C. 2173.....	45,8	0,0	14,0	28,7	43,1	57,1	11,2	6. 30. 28,56				28,34			6. 31. 21,24			B.
	(c) H. C. 12925.....	27,0	41,6	56,0	10,9	25,7	40,0	54,7	6. 35. 10,84				10,60			6. 36. 3,51			B.
	Sirius.....	5,5	19,3	33,3	47,7	1,9	15,6	29,6	6. 37. 47,56				47,76	52,93		6. 38. 40,67			B.
	H. C. 13420.....	47,7	2,2	17,1	32,1	47,2	1,7	16,4	6. 48. 32,05				31,80			6. 49. 24,72			B.
	(d) H. C. 13526.....	....	6,3	20,7	36,6	51,9	6,6	....	6. 51. 36,42				36,13			6. 52. 29,05			B.
	(e) H. C. 16596.....	8,3	....	....	50,0	4,2	....	31,8	8. 18. 50,01				49,82			8. 19. 42,83			B.
	(e)(f) B. (w.) viii. 882	5,9	19,8	33,3	47,7	1,4	15,1	29,1	8. 32. 47,47				47,30			8. 33. 40,32			B.
	(g) ε Hydræ.....	26,3	39,9	53,2	7,1	21,0	34,1	47,8	8. 38. 7,06				6,96	53,01		8. 38. 59,98			B.
Feb. 17	(h) H. C. 9409.....	....	38,8	52,9	7,3	22,1	36,1	50,7	4. 52. 7,47				7,25		1,27	4. 53. 1,33			B.
	B.A.C. 1562.....	8,7	23,3	38,2	53,7	8,9	23,7	38,6	4. 55. 53,58				53,31			4. 56. 47,39			B.
	H. C. 9625.....	52,1	6,2	20,2	34,2	48,7	2,3	16,0	4. 58. 34,24				34,05			4. 59. 28,13			B.
	(i) H. C. 9941.....	46,6	....	14,8	29,2	43,6	57,4	11,6	5. 10. 29,15				28,95			5. 11. 23,04			B.
	(k) H. C. 10013.....	....	20,8	35,7	51,2	6,7	21,8	....	5. 12. 51,24				50,94			5. 13. 45,04			B.
	β Tauri.....	20,2	35,5	50,7	6,2	21,8	36,8	52,0	5. 16. 6,17				5,86	54,10		5. 16. 59,96			B.
	(l) H. C. 10252.....	45,1	59,1	13,1	27,1	41,6	55,2	9,2	5. 19. 27,20				27,02			5. 20. 21,12			B.
	H. C. 10397.....	5,8	19,7	33,2	48,0	2,0	15,8	29,7	5. 23. 47,74				47,55			5. 24. 41,66			B.
	(m) H. C. 10829.....	51,1	6,0	20,4	35,8	50,9	5,3	20,1	5. 35. 35,66				35,40			5. 36. 29,52			B.
	H. C. 10932.....	....	55,3	9,4	24,0	38,7	52,8	....	5. 38. 24,14				23,91			5. 39. 18,03			B.
	(n) H. C. 11070.....	34,0	....	2,3	17,0	....	45,2	....	5. 42. 16,81				16,60			5. 43. 10,72			B.
	(n) α Orionis.....	....	....	5,2	19,0	32,8	45,9	....	5. 46. 18,94				18,83	54,07		5. 47. 12,96			B.
	Sirius.....	4,1	18,2	31,7	46,2	0,6	14,2	28,2	6. 37. 46,17				46,37	54,31		6. 38. 40,54			B.
	B.A.C. 2243.....	24,9	40,0	54,7	9,8	24,7	39,2	54,1	6. 43. 9,63				9,37			6. 44. 3,55			B.
	B.A.C. 2265.....	7,3	21,6	35,2	49,9	4,0	18,1	32,1	6. 46. 49,75				49,55			6. 47. 43,73			B.
	Procyon.....	2,1	15,3	29,2	42,9	56,6	9,8	23,2	7. 30. 42,73				42,64	54,20		7. 31. 36,86			B.
	Pollux.....	39,8	55,1	10,0	25,6	41,0	56,0	11,2	7. 35. 25,53				25,23	54,11		7. 36. 19,45			B.
	B. (w.) viii. 738..	52,2	6,1	19,6	33,8	47,6	1,0	14,7	8. 27. 33,57				33,41			8. 28. 27,68			B.
	ε Hydræ.....	25,1	38,7	51,9	6,0	19,7	32,8	46,2	8. 38. 5,77				5,67	54,30		8. 38. 59,95			B.
	Regulus.....	....	....	....	....	53,0	6,3	20,0	9. 59. 38,80				38,64	54,40		10. 0. 32,99			B.
Feb. 18	H. C. 10975.....	43,8	58,8	13,6	29,2	44,5	59,6	14,3	5. 39. 29,12				28,83		1,45	5. 40. 24,22			B.
	H. C. 11070.....	32,8	46,9	1,0	15,8	30,1	44,0	58,1	5. 42. 15,53				15,33			5. 43. 10,73			B.
	(o) α Orionis.....	37,0	50,5	3,8	17,7	31,3	44,7	58,2	5. 46. 17,60				17,49	55,40		....			B.
Feb. 19	(p) ☉ 1 L.....	48,2	2,0	15,7	29,7	43,7	57,0	10,8	22. 9. 29,59				29,74		1,46	22. 10. 26,33			B.
	☉ 2 L.....	0,7	14,2	28,0	42,0	56,0	9,3	23,2	22. 11. 41,91				42,06			22. 12. 38,65			B.
	β Tauri.....	17,2	32,6	47,8	3,3	18,8	33,9	49,1	5. 16. 3,24				2,93	57,00		5. 16. 59,95			B.
	(q) H. C. 10247.....	50,2	6,7	21,0	36,8	52,1	6,8	22,0	5. 19. 36,52				36,23			5. 20. 33,26			B.
	H. C. 10397.....	2,8	16,8	30,7	44,9	59,0	12,7	26,6	5. 23. 44,79				44,59			5. 24. 41,62			B.
	(r) H. C. 10528.....	50,2	5,5	20,1	35,2	50,7	5,1	20,2	5. 27. 35,29				35,02			5. 28. 32,05			B.
	(s) H. C. 10679.....	2,7	17,5	32,1	47,6	2,9	17,1	32,3	5. 31. 47,46				47,19			5. 32. 44,23			B.
	(t) Sirius.....	1,2	15,4	29,3	43,5	57,7	11,2	25,2	6. 37. 43,36				43,56	57,09		6. 38. 40,67			B.
	H. C. 16447.....	31,3	46,1	0,8	15,9	30,7	45,2	0,3	8. 15. 15,76				15,52			8. 16. 12,72			B.
	H. C. 16596.....	3,4	17,8	31,3	45,8	0,1	13,8	27,5	8. 18. 45,67				45,48			8. 19. 42,69			B.
	H. C. 16756.....	23,2	37,3	51,3	5,2	19,7	33,3	47,2	8. 23. 5,31				5,11			8. 24. 2,32			B.
	(u) B.A.C. 2888.....	14,6	28,7	42,1	56,7	10,8	24,6	38,3	8. 26. 56,54				56,34			8. 27. 53,56			B.
	ε Hydræ.....	22,1	35,7	49,2	2,8	16,8	29,8	43,3	8. 38. 2,81				2,71	57,26		8. 38. 59,94			B.
	Regulus.....	54,2	8,3	22,0	35,9	50,1	3,6	17,2	9. 59. 35,90				35,74	57,31		10. 0. 33,05			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) The Temperature was low on the nights of Feb. 16-18, and the clock's rate seems to have been thereby affected. (b) Disturbance. (c) 'The preceding of two.' (d) 'The preceding and brighter of two.' After this observation clouds came over. (e) Clouds. (f) 'One follows,' viz. II. C. 13818, the star intended to be observed. (g) Clouds passing: much interruption during the evening by clouds. (h) Faint from passing clouds. (i) Cloudy. (k) 'The following of two.' (l) 'A brighter preceded about 40<sup>s</sup>.' (m) 'The north-following of two.' Clouds passing. (n) Very faint from cloud. (o) The Temperature was at 12° on the night of the 18th. (p) Unsteady. (q) Complete disturbance. (r) The Temperature in the Transit room, 29° 0. (s) 'The preceding and fainter of two.' The other is H. C. 10606. (t) Great motion. (u) The sky hazy this night and definition bad.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Feb. 21	$\alpha$ Orionis.....	....	45,8	59,1	13,2	26,8	40,2	....	5.46.13,02	-5,0	-1,1	+12,7	12,91	59,93	1,55				B.
Feb. 22	$\alpha$ Orionis.....	30,8	44,2	57,7	11,4	25,2	38,4	52,1	5.46.11,40				11,29	61,54	1,50				B.
Feb. 23	$\odot$ 1 L.....	58,9	12,7	26,0	40,1	53,9	7,4	21,0	22.24.40,00				40,14		1,33	22.25.42,65			B.
	$\odot$ 2 L.....	10,8	24,3	38,0	51,9	5,4	19,1	32,7	22.26.51,74				51,88			22.27.54,40			B.
	(a)(b) $\alpha$ Orionis.....	29,2	43,1	56,3	10,1	24,0	37,2	50,6	5.46.10,07				9,96	62,85					B.
	(b) B.A.C. 2154.....	39,3	54,0	9,0	24,1	39,1	53,6	8,2	6.27.23,90				23,65			6.28.26,61			B.
	B.A.C. 2184.....	....	22,1	36,0	50,5	4,7	18,5	....	6.31.50,56				50,17			6.32.53,13			B.
	(c) Sirius.....	55,2	9,3	23,2	37,4	51,6	5,4	19,4	6.37.37,36				37,56	63,03					B.
Feb. 25	$\odot$ 1 L.....	31,3	44,8	58,2	12,0	25,8	39,0	53,0	22.32.12,01			+14,2	12,17		1,30	22.33.17,20			B.
	$\odot$ 2 L.....	42,2	56,0	9,6	23,2	....	50,7	4,4	22.34.23,33				23,49			22.35.28,52			B.
	Aldebaran.....	....	55,7	9,3	23,7	37,8	51,6	5,7	4.26.23,63				23,46	65,35					B.
Feb. 28	(d) $\odot$ 1 L.....	44,3	58,2	11,7	25,3	39,1	52,4	6,1	22.43.25,30			-0,8	25,46		1,34	22.44.34,63			B.
	$\odot$ 2 L.....	55,2	9,0	22,1	36,3	50,0	3,4	17,1	22.45.56,16				36,32			22.46.45,49			B.
	Aldebaran.....	....	....	5,1	19,4	33,8	47,3	1,3	4.26.19,37				19,22	69,54		4.27.28,71			B.
	$\beta$ Tauri.....	4,7	20,0	35,0	50,6	6,1	21,3	36,2	5.15.50,55				50,27	69,50		5.16.59,80			B.
	Sirius.....	48,6	2,5	16,3	30,6	44,9	58,5	12,6	6.37.30,57				30,82	69,69		6.38.40,43			B.
	H. C. 13688.....	3,8	18,2	32,6	47,0	2,0	16,0	30,4	6.55.47,15				46,96			6.56.56,59			B.
	B.A.C. 2363.....	34,5	49,1	4,0	19,0	34,0	48,8	3,6	7.4.19,00				18,78			7.5.28,42			B.
	H. C. 14177.....	43,8	58,1	12,7	27,2	42,0	56,3	11,0	7.9.27,30				27,11			7.10.36,75			B.
	H. C. 14321.....	48,9	3,2	17,4	32,0	46,8	1,0	15,2	7.13.32,07				31,88			7.14.41,53			B.
	H. C. 14407.....	29,8	44,1	58,0	12,6	27,0	40,9	55,0	7.16.12,48				12,32			7.17.21,97			B.
	H. C. 14556.....	52,6	7,0	21,0	35,7	50,2	4,2	18,6	7.20.35,62				35,44			7.21.45,09			B.
	Castor.....	16,2	32,2	47,9	4,0	20,1	35,8	51,7	7.24.3,99				3,66	69,55		7.25.13,31			B.
	Procyon.....	46,4	0,0	13,4	27,2	40,9	53,9	7,7	7.30.27,07				27,02	69,72		7.31.36,68			B.
	Pollux.....	24,0	39,2	54,3	10,2	25,4	40,4	55,8	7.35.9,90				9,63	69,60		7.36.19,30			B.
	H. C. 15238.....	55,0	10,0	24,6	39,7	54,8	9,1	24,0	7.40.39,60				39,38			7.41.49,05			B.
	H. C. 15330.....	54,0	8,1	21,9	36,1	50,3	4,0	18,0	7.43.36,06				35,90			7.44.45,57			B.
	(e) B.A.C. 2658.....	20,8	35,0	49,0	3,5	17,9	31,7	46,0	7.51.3,41				3,23			7.52.12,91			B.
	B. (w.) VII. 1654.....	25,2	39,2	53,0	7,0	21,0	34,8	48,5	7.55.6,96				6,83			7.56.16,51			B.
	B. (w.) VII. 1732.....	0,9	14,9	28,3	42,6	56,8	10,3	24,2	7.57.42,57				42,43			7.58.52,12			B.
	H. C. 15954.....	25,2	39,9	54,1	8,8	23,3	37,8	54,0	8.1.8,73				8,54			8.2.18,23			B.
	H. C. 16033.....	54,1	9,2	23,9	39,1	54,1	8,6	23,5	8.3.38,93				38,71			8.4.48,40			B.
	(f) B. (w.) VIII. 221.....	19,7	33,2	47,1	1,1	15,2	29,0	43,0	8.8.1,18				1,05			8.9.10,74			B.
	(g) H. C. 16353.....	38,6	52,8	6,8	....	....	....	....	8.12.21,09				20,93			8.13.30,63			B.
	(h) H. C. 16380.....	32,7	47,0	1,0	15,2	29,8	43,7	57,8	8.13.15,31				15,15			8.14.24,85			B.
	H. C. 16565.....	6,0	20,3	34,7	49,3	4,0	18,3	32,9	8.17.49,36				49,17			8.18.58,87			B.
	H. C. 16756.....	10,7	24,6	38,4	52,8	7,0	20,4	34,6	8.22.52,64				52,48			8.24.2,19			B.
	B.A.C. 2888.....	2,0	15,9	29,7	44,0	58,0	11,7	25,8	8.26.43,87				43,71			8.27.53,42			B.
	B. (w.) VIII. 828.....	57,9	11,8	25,1	39,4	53,1	6,8	20,3	8.30.39,20				39,08			8.31.48,80			B.
	$\epsilon$ Hydræ.....	9,6	23,1	36,4	50,3	4,2	17,2	30,9	8.37.50,24				50,18	69,75		8.38.59,90			B.
	$\delta$ Leonis.....	24,9	39,2	53,6	8,3	23,1	37,2	51,6	11.5.8,27				8,08	69,85		11.6.17,94			B.
Mar. 1	(i) $\alpha$ Orionis.....	21,2	34,8	48,2	1,8	15,7	29,2	42,6	5.46.1,93				1,85	70,87	1,35				B.
	H. C. 11349.....	....	38,3	52,9	7,8	22,4	36,7	....	5.51.7,62				7,42			5.52.18,32			B.
	H. C. 11466.....	50,0	4,0	18,0	32,6	47,0	1,0	15,1	5.54.32,53				32,35			5.55.43,25			B.
	H. C. 11584.....	54,0	8,0	22,0	36,1	50,3	4,2	18,0	5.57.36,09				35,94			5.58.46,85			B.
	(k) H. C. 11699.....	24,0	39,6	54,8	10,1	25,9	40,4	56,1	6.1.10,12				9,84			6.2.20,75			B.
	$f^2$ Orionis.....	3,8	17,7	31,4	45,8	59,9	13,8	27,7	6.5.45,73				45,58			6.6.56,49			B.
	(l) $\delta$ Ursæ Min. SP.....	....	39,3	22,5	11,0	0,8	44,0	....	6.18.11,59				28,46						B.
	(m) H. C. 12700.....	3,1	17,9	32,4	48,0	2,4	17,1	32,2	6.28.47,59				47,37			6.29.58,31			B.
	B.A.C. 2184.....	0,0	14,1	28,0	42,0	56,2	10,1	24,1	6.31.42,07				41,92			6.32.52,86			B.
	H. C. 12932.....	15,9	30,3	45,0	59,8	14,5	29,1	43,6	6.34.59,75				59,55			6.36.10,49			B.
	Sirius.....	47,2	1,2	15,2	29,1	43,6	57,5	11,2	6.37.29,29				29,53	70,97					B.
	(a) H. C. 13301.....	13,1	27,2	41,2	55,8	10,0	24,0	38,1	6.44.55,63				55,47			6.46.6,42			B.
	H. C. 13420.....	29,1	43,4	58,4	13,8	28,8	....	58,1	6.48.13,54				13,32			6.49.24,27			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) Cloudy. (b) A violent north wind, and snow drifting into the room: the clock scarcely audible. (c) A large disk. (d) Wire II was set down 5.2. (e) The counting was found 10<sup>s</sup> slow, and the noted times have been corrected accordingly. (f) 'A fainter preceding.' (g) 'Of greater N.P.D. than the next.' (h) 'One of equal magnitude and less N.P.D. follows.' (i) Just after the sky had cleared. (j) The sky thick. The noted time was 1<sup>m</sup> greater, but the R.A. of H. C. was confirmed on consulting Harding's map. (k) Indefinite. (l) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				s.	s.	s.	
Mar. 1	(a) $\omega$ Geminorum....	32,0	46,8	....	....	....	....	0,3	6.52.16,23	-5,0	-0,8	+14,2	16,02		1,35	6.53.26,98		B.	
Mar. 8	$\epsilon$ Hydræ.....	57,2	11,0	24,2	38,1	51,8	5,0	18,6	8.37.37,99				37,95	81,92	1,71	8.38.59,80		B.	
	(b) H. C. 17755.....	17,3	32,3	47,0	2,0	16,7	31,0	45,6	8.51.1,70			-2,0	+15,8	1,48			8.52.23,34		B.
	B.A.C. 3095.....	34,9	48,4	2,0	16,0	30,0	43,6	57,1	8.55.16,00				15,90			8.56.37,77		B.	
	(c) B. (w.) VIII. 1507....	....	38,8	52,5	6,6	20,7	34,3	....	8.58.6,58				6,44			8.59.28,31		B.	
	B. (w.) IX. 26....	14,1	28,1	41,6	55,9	10,0	23,6	37,3	9.0.55,80				55,67			9.2.17,54		B.	
	B. (w.) IX. 127....	39,1	53,2	6,6	20,3	34,4	48,1	1,8	9.5.20,50				20,39			9.6.42,27		B.	
	(d) B. (w.) IX. 233....	38,3	52,0	5,8	19,8	33,5	....	0,9	9.10.19,62				19,52			9.11.41,41		B.	
	B. (w.) IX. 341....	....	30,8	44,2	58,2	12,3	26,0	....	9.14.58,30				58,18			9.16.20,07		B.	
	$\alpha$ Hydræ.....	19,8	33,2	46,5	0,3	14,2	27,6	41,2	9.19.0,40				0,60	81,95		9.20.22,50		B.	
	B.A.C. 3404.....	8,8	22,8	36,3	50,8	5,0	18,7	32,6	9.48.50,71				50,56			9.50.12,49		B.	
	H. C. 19570.....	17,2	31,2	45,0	59,2	13,3	27,1	41,1	9.51.59,16				59,00			9.53.20,93		B.	
	B. (w.) IX. 1266....	50,8	4,0	17,7	31,3	45,2	58,4	12,0	9.57.31,34				31,28			9.58.53,22		B.	
	(e) $\delta$ Leonis.....	13,1	....	42,0	56,1	11,0	25,2	39,3	11.4.56,30				56,09	81,90		11.6.18,11		B.	
	Mar. 9	$\odot$ 1 L.....	57,9	11,3	24,7	38,4	52,1	5,3	19,0	23.16.38,39				38,55			23.18.1,44		B.
		$\odot$ 2 L.....	7,4	21,0	34,3	48,0	1,8	15,1	28,3	23.18.47,99				48,15			23.20.11,04		B.
Mar. 10	(f) Sirius.....	....	47,0	0,8	14,8	29,2	43,1	....	6.37.14,98				15,30	85,04	1,83	6.38.40,42		B.	
	(g) B. (w.) VIII. 780....	0,4	14,2	28,0	42,0	55,8	9,3	23,1	8.28.41,83				41,72			8.30.6,98		B.	
	(h) B. (w.) VIII. 882....	33,2	47,0	0,7	15,2	29,1	42,7	56,7	8.32.14,94				14,81			8.33.40,07		B.	
	$\epsilon$ Hydræ.....	54,0	7,4	20,8	34,7	48,3	1,8	15,3	8.37.34,61				34,57	85,29		8.38.59,84		B.	
	(i) H. C. 17569.....	43,1	57,1	11,0	....	39,1	53,1	7,0	8.45.25,07				24,92			8.46.50,20		B.	
	(g) B. (w.) VIII. 1299....	10,8	24,2	38,0	52,0	5,8	19,2	33,0	8.48.51,85				51,75			8.50.17,03		B.	
	(k) H. C. 17818.....	9,4	24,0	38,1	53,1	7,9	22,1	36,2	8.52.52,97				52,77			8.54.18,06		B.	
	H. C. 17932.....	54,2	8,3	22,1	36,6	50,9	4,5	18,7	8.56.36,47				36,31			8.58.1,60		B.	
	H. C. 18050.....	31,8	45,7	59,4	13,6	28,0	41,8	55,7	9.0.13,71				13,56			9.1.38,86		B.	
	$\pi^1$ Cancri.....	8,1	22,0	36,0	50,1	4,1	18,0	31,9	9.2.50,02				49,86			9.4.15,16		B.	
	$\alpha$ Hydræ.....	16,0	29,7	43,3	57,0	10,8	24,0	37,8	9.18.56,94				57,14	85,40		9.20.22,46		B.	
	(l) B. (w.) IX. 493....	2,0	15,2	29,0	43,0	57,0	10,3	24,0	9.21.42,93				42,83			9.23.8,16		B.	
	(m) B. (w.) IX. 591....	1,0	15,1	28,7	43,1	57,0	10,7	24,4	9.25.42,86				42,72			9.27.8,05		B.	
	(n) $\delta$ Leonis.....	9,5	23,9	38,0	52,8	7,5	21,8	36,1	11.4.52,80				52,59	85,41		11.6.18,05		B.	
	Mar. 11	(o) $\odot$ 1 L.....	15,8	29,3	42,8	56,3	....	23,6	37,0	23.24.56,42				56,56		1,86	23.25.23,00		B.
$\odot$ 2 L.....		25,3	39,0	....	6,1	19,9	33,2	46,5	23.27.6,05				6,19			23.27.32,63		B.	
(p) Polaris.....		5,0	50,0	....	19,0	....	46,5	....	1.5.18,54				37,38			1.5.3,94		B.	
(q) $\alpha$ Arietis.....		....	56,7	11,0	25,9	40,3	55,1	9,5	1.58.25,79				25,57	26,65		1.58.52,20		B.	
$\alpha$ Orionis.....		5,1	18,4	32,2	45,8	59,5	12,8	26,3	5.46.45,73				45,67	26,88		5.47.12,60		B.	
Sirius.....		31,0	45,0	58,7	13,3	27,2	41,2	55,3	6.38.13,10				13,42	26,90		6.38.40,42		B.	
H. C. 13125.....		....	58,1	13,0	28,1	43,3	58,0	....	6.41.28,10				27,84			6.41.54,84		B.	
B.A.C. 2243.....		51,7	6,8	21,3	36,5	51,8	6,2	21,1	6.43.36,49				36,24			6.44.3,24		B.	
B.A.C. 2265.....		34,1	48,2	2,2	16,7	31,0	45,0	59,0	6.47.16,60				16,43			6.47.43,34		B.	
B.A.C. 2280.....		15,0	29,2	43,0	57,1	11,3	25,2	39,0	6.50.57,12				56,97			6.51.23,98		B.	
H. C. 13570.....		....	50,1	4,0	18,3	32,9	46,6	....	6.53.18,38				18,21			6.53.45,22		B.	
H. C. 13688.....		46,0	0,7	15,0	29,7	44,1	58,5	13,0	6.56.29,58				29,37			6.56.56,39		B.	
H. C. 13788.....		37,8	52,2	6,7	21,4	36,0	50,2	4,9	6.59.21,31				21,10			6.59.48,12		B.	
H. C. 13889.....		31,9	46,2	0,2	15,0	29,7	43,7	58,0	7.2.14,96				14,76			7.2.41,79		B.	
B.A.C. 2363.....		16,9	31,6	46,0	1,5	16,5	31,0	46,0	7.5.1,35				1,11			7.5.28,14		B.	
(r) H. C. 14177.....		26,0	40,7	55,0	9,8	24,6	38,6	53,0	7.10.9,68				9,47			7.10.36,51		B.	
H. C. 14321.....		31,2	45,4	0,0	14,5	29,1	43,1	57,7	7.14.14,43				14,23			7.14.41,27		B.	
H. C. 14515.....		17,0	31,1	44,8	59,0	13,0	27,0	40,8	7.19.58,96				58,81			7.20.25,86		B.	
Castor.....		58,7	14,4	30,1	46,4	2,6	18,1	33,9	7.24.46,32				45,94	27,11		7.25.13,00		B.	
Procyon.....		29,0	42,5	55,7	9,6	23,3	36,6	50,1	7.31.9,55				9,53	27,07		7.31.36,59		B.	
Pollux.....		6,3	21,7	36,8	52,3	7,8	22,8	38,0	7.35.52,24				51,94	27,14		7.36.19,01		B.	
Mar. 12		$\odot$ 1 L.....	....	8,1	21,3	35,0	49,0	....	....	23.28.35,10				35,23		1,77	23.29.3,53		B.
		$\odot$ 2 L.....	3,9	....	....	44,3	....	11,2	25,0	23.30.44,35				44,48			23.31.12,78		B.
		(t) $\alpha$ Andromedæ....	32,1	47,2	....	17,9	33,2	48,2	3,8	0.0.17,82				17,52	28,39		0.0.45,86		B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

Mar. 10, 22<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) The observation very uncertain from cloud; the star was set down of Mag. 9. (b) Faint at times. (c) 'A brighter of equal N.P.D. follows.' (d) Faint. (e) Bad illumination of the field. (f) Faint: the sky was just clearing. (g) 'The following of two.' (h) Hazy sky. (i) 'The south-following star,' the other being H. C. 17565. (k) Faint at Wire VII. (l) The star intended to be taken was H. C. 18702. (m) 'Another north-following,' viz. B. (w.) IX. 593. (n) Faint from cloud. (o) Motion and bad definition: clouds passing. (p) Unsteady at Wire I. (q) Cloudy. (r) 'A double star of Mag. 6 followed three intervals.' (s) Cloudy: 2 L without a dark glass. (t) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Mar. 12	H. C. 12262.....	21,8	36,0	50,0	4,3	19,0	32,9	47,0	6.17.44,3	-5,0	-2,0	+15,8	4,24		1,77	6.17.33,05			B.
	H. C. 12348.....	....	58,0	12,7	28,0	43,2	58,1	....	6.19.28,00				27,71			6.19.56,52			B.
	(a) H. C. 12483.....	34,7	50,1	5,0	20,6	36,1	51,0	6,1	6.23.20,51				20,31			6.23.49,12			B.
	B.A.C. 2154.....	13,4	28,0	42,8	57,8	12,8	27,3	42,0	6.27.57,73				57,49			6.28.26,31			B.
	(b) B.A.C. 2173.....	....	23,6	37,6	52,2	6,8	20,8	....	6.30.52,20				52,01			6.31.20,83			B.
	H. C. 12875.....	23,1	37,0	51,0	5,5	20,0	33,9	48,0	6.34.5,50				5,33			6.34.34,16			B.
	(c) Sirius.....	29,1	43,3	57,0	11,3	25,5	39,2	53,3	6.38.11,24				11,56	28,74		6.38.40,39			B.
	β Leonis.....	23,6	37,3	51,2	5,3	19,6	33,2	47,2	11.41.5,34				5,18	29,23		11.41.34,38			B.
Mar. 14	Procyon.....	23,8	37,2	50,7	4,4	18,2	31,3	44,8	7.31.4,34				4,37	32,19	1,66	7.31.36,56			B.
	Pollux.....	1,3	16,6	31,7	47,1	2,6	17,8	33,0	7.35.47,16				46,94	32,10		7.36.19,14			B.
	(d) B. (w.) x. 993.....	....	....	27,3	....	54,5	....	21,2	10.54.40,87				40,95			10.55.13,38			B.
	B. (w.) x. 1063.....	44,4	58,0	11,8	25,8	39,4	53,0	6,7	10.58.25,59				25,55			10.58.57,98			B.
	(e) B. (w.) xi. 23.....	40,0	53,9	7,0	21,0	34,9	48,0	1,7	11.2.20,93				20,92			11.2.53,35			B.
	δ Leonis.....	2,2	16,8	31,0	45,6	0,1	14,4	29,0	11.5.45,59				45,46	32,55		11.6.17,90			B.
	B. (w.) xi. 149.....	21,0	34,4	47,9	1,9	15,5	29,1	42,6	11.9.1,77				1,78			11.9.34,22			B.
	(f) B. (w.) xi. 186.....	....	34,8	47,8	1,3	15,1	28,5	....	11.11.1,50				1,57			11.11.34,01			B.
	B. (w.) xi. 243.....	25,1	38,3	52,0	5,0	19,1	32,2	46,0	11.14.5,39				5,48			11.14.37,93			B.
	Polaris SP.....	....	....	55,5	51,4	40,5	....	....	13.3.49,54				30,28			13.5.2,86			B.
	(g) Polaris SP. M....	38,5	22,0	8,0	51,4	34,3	18,5	8,5	13.3.52,07				32,81			13.5.5,39			B.
Mar. 15	(h) ☉ 1 L.....	48,7	2,2	15,3	28,9	42,9	55,8	....	23.39.29,04				29,20		1,66	23.40.2,52			B.
	Polaris.....	55,0	....	19,0	....	0,5	43,0	....	1.5.10,63				31,98			1.5.5,40			B.
	Aldebaran.....	12,9	27,0	40,8	55,1	9,2	23,1	37,0	4.26.55,01				54,92	33,59		4.27.28,57			B.
	β Tauri.....	40,1	55,3	10,4	26,0	41,5	56,5	11,9	5.16.25,96				25,73	33,74		5.16.59,44			B.
	H. C. 13688.....	39,2	53,8	8,0	22,0	37,2	51,6	6,0	6.56.22,65				22,52			6.56.56,34			B.
	H. C. 13889.....	25,0	39,2	53,3	7,9	22,8	36,6	51,0	7.2.7,97				7,84			7.2.41,67			B.
	B.A.C. 2363.....	9,9	24,8	39,3	54,5	9,6	24,0	39,0	7.4.54,44				54,28			7.5.28,11			B.
	H. C. 14113.....	27,0	41,0	55,0	9,2	23,3	37,1	51,0	7.8.9,09				9,00			7.8.42,84			B.
	δ Geminorum nf..	3,0	17,6	32,0	46,8	1,4	15,6	30,1	7.10.46,65				46,52			7.11.20,36			B.
	H. C. 14521.....	24,2	38,8	53,0	7,6	22,1	36,1	50,9	7.14.7,53				7,40			7.14.41,24			B.
	H. C. 14407.....	5,2	19,4	33,4	48,0	2,2	16,1	30,2	7.16.47,79				47,69			7.17.21,53			B.
	H. C. 14515.....	10,0	24,0	37,8	52,0	6,1	19,8	33,9	7.19.51,94				51,86			7.20.25,71			B.
	H. C. 14605.....	53,1	7,6	21,8	36,3	51,0	5,1	19,2	7.22.36,30				36,17			7.23.10,02			B.
	(i) H. C. 14771.....	11,5	25,7	40,0	54,5	9,1	23,1	37,8	7.26.54,53				54,40			7.27.28,26			B.
	Procyon.....	22,2	35,6	48,8	2,6	16,2	29,6	43,1	7.31.2,58				2,61	33,93		7.31.36,47			B.
	Pollux.....	59,3	14,8	29,8	45,3	0,8	15,8	31,2	7.35.45,29				45,07	33,95		7.36.18,94			B.
	(k) H. C. 15155 f....	35,2	49,4	3,6	18,0	32,3	46,4	0,7	7.39.17,95				17,84			7.39.51,71			B.
	ψ Leonis.....	28,3	42,1	56,0	10,2	24,1	37,9	51,9	9.35.10,07				10,00			9.35.44,01			B.
	H. C. 19162.....	23,1	37,7	51,6	6,0	20,2	34,3	48,2	9.38.5,87				5,76			9.38.39,77			B.
	21 Leonis.....	39,9	53,8	7,1	21,3	35,1	48,9	2,6	9.42.21,24				21,19			9.42.55,20			B.
	(l) B. (w.) ix. 1017.....	54,0	7,6	21,0	34,6	48,5	2,0	15,3	9.46.34,71				34,71			9.47.8,73			B.
	B.A.C. 3404.....	56,7	10,6	24,2	38,7	53,0	6,7	20,6	9.49.38,65				38,57			9.50.12,59			B.
	(m) B. (w.) ix. 1137.....	58,7	....	26,4	39,9	54,0	....	21,8	9.52.40,16				40,13			9.53.14,15			B.
	(n) Regulus.....	18,0	31,6	45,2	59,2	13,2	26,9	40,6	9.59.59,25				59,20	33,87		10.0.33,23			B.
Mar. 17	B. (w.) xi. 23. ...	35,2	48,7	2,1	16,0	29,8	43,0	56,7	11.2.15,93				15,92		1,77	11.2.53,36			B.
	δ Leonis.....	57,2	11,8	26,1	40,8	55,3	9,5	24,0	11.5.40,67				40,54	37,48					B.
	H. C. 22218.....	12,6	26,2	39,5	53,2	6,9	20,0	33,6	11.36.53,14				53,25			11.37.30,73			B.
	β Leonis.....	15,2	29,1	43,1	57,2	11,2	25,0	38,9	11.40.57,10				57,01	37,43					B.
Mar. 18	ε Hydrae.....	40,1	53,6	7,0	20,8	34,4	47,7	1,3	8.38.20,70				20,71	39,06	1,77	8.38.59,80			B.
	H. C. 17456.....	34,6	48,0	3,0	17,2	....	....	....	8.43.17,21				17,09			8.43.56,18			B.
	H. C. 17497.....	36,0	50,1	4,3	18,6	32,8	47,0	1,5	8.44.18,62				18,50			8.44.57,60			B.
	H. C. 17905.....	46,0	0,1	14,4	29,2	43,4	58,2	12,0	8.56.29,05				28,93			8.57.8,04			B.
	δ Leonis.....	....	10,2	24,2	38,8	53,6	7,8	22,1	11.5.38,90				38,77	39,25		11.6.18,04			B.
	H. C. 22986.....	16,8	30,0	43,4	57,2	10,2	24,1	37,3	12.7.57,00				57,16			12.8.36,51			B.
	B. (w.) xii. 159.....	....	32,6	46,2	59,6	13,3	27,2	39,8	12.9.59,72				59,80			12.10.39,15			B.
	(o) B. (w.) xii. 218.....	26,4	40,1	53,9	7,2	20,8	33,8	47,5	12.13.7,10				7,20			12.13.46,55			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) 'One followed an interval,' viz. H.C. 12496. (b) Faint from cloud. (c) The sky was subsequently covered with thin cloud. (d) Very faint from thin cloud. (e) Faint at times. (f) The noted times have been corrected by +15' for error in counting. (g) Flaring. (h) Interruption by cloud. (i) A following object was noticed. (k) 'The following and brighter of a double star.' (l) The sky thick. (m) The observation was considered worthless, the star being almost invisible from cloud. (n) Faint. (o) Extremely faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Mar. 18	H. C. 23223.....	8,2	21,9	35,2	49,0	2,3	16,0	29,2	12. 16. 48,83	-5,0	-0,8	+15,8	49,01		1,77	12. 17. 28,37			B.
	B. (w.) XII. 332..	4,1	17,4	30,8	44,2	57,8	11,6	25,0	12. 19. 44,41				44,60			12. 20. 23,96			B.
	(a) B. (w.) XII. 388..	18,4	32,0	45,7	58,7	12,6	25,2	39,1	12. 23. 58,82				58,96			12. 24. 38,33			B.
	β Corvi.....	18,2	32,4	47,2	1,8	16,5	30,7	45,1	12. 26. 1,70				2,04	39,40		12. 26. 41,41			B.
Mar. 19	(b) ☉ 1 L.....	17,6	31,0	44,2	58,0	11,9	24,9	38,4	23. 53. 58,00				58,11		1,72	23. 54. 38,27			B.
	☉ 2 L.....	26,2	40,0	53,1	7,0	20,2	33,7	47,1	23. 56. 6,76				6,87			23. 56. 47,04			B.
	Regulus.....	10,9	24,7	38,1	52,3	6,2	19,7	33,6	9. 59. 52,21				52,16	40,89					B.
	β Leonis.....	11,8	25,6	39,3	53,5	7,7	21,4	35,4	11. 40. 53,53				53,44	41,01					B.
Mar. 21	β Leonis.....	....	22,2	36,0	50,0	4,1	17,6	31,8	11. 40. 49,97			+15,7	49,88	44,58	1,61				B.
	Spica.....	2,2	16,0	29,5	43,3	57,1	10,6	24,1	13. 16. 43,26				43,53	44,59					B.
Mar. 22	☉ 1 L.....	7,3	20,7	34,2	47,9	1,3	14,7	28,2	0. 4. 47,76				47,85		1,60	0. 5. 33,17			T.
	☉ 2 L.....	16,2	29,7	43,0	56,7	10,3	23,7	36,9	0. 6. 56,64				56,73			0. 7. 42,05			T.
	Rigel.....	1,4	14,7	28,2	42,1	56,0	9,2	22,7	5. 6. 42,04				42,29	45,60		5. 7. 27,94			T.
	β Tauri.....	28,0	43,2	58,2	13,7	29,4	44,3	59,7	5. 16. 13,78				13,55	45,79		5. 16. 59,21			T.
	B. (w.) IX. 1118..	35,7	49,1	2,3	16,1	29,8	43,2	56,7	9. 51. 16,13				16,14			9. 52. 2,11			T.
	H. C. 19617.....	45,4	58,8	12,2	26,0	39,8	53,1	6,7	9. 54. 26,00				25,99			9. 55. 11,96			T.
	B. (w.) IX. 1259..	16,4	30,4	44,0	58,0	12,1	25,7	39,6	9. 57. 58,03				57,96			9. 58. 43,94			T.
	(c) Regulus.....	....	19,7	33,2	47,2	1,2	14,7	....	9. 59. 47,20				47,14	45,90		10. 0. 33,12			T.
Mar. 23	(c) H. C. 15159.....	....	50,0	4,1	18,8	33,6	47,7	....	7. 39. 18,84				18,70		1,68	7. 40. 6,19			T.
	H. C. 15323.....	57,7	12,2	26,1	41,0	55,7	9,7	24,1	7. 43. 40,92				40,78			7. 44. 28,27			T.
	* N.P.D. 69°. 26'	....	....	....	46,3	1,2	15,2	29,8	7. 44. 46,52				46,38			7. 45. 33,87			T.
	H. C. 15809.....	41,7	56,6	10,9	25,7	40,7	55,0	9,7	7. 57. 25,76				25,62			7. 58. 13,13			T.
	(d) H. C. 15936.....	....	30,1	43,9	58,2	12,7	26,4	....	8. 0. 58,26				58,16			8. 1. 45,67			T.
	H. C. 16130.....	0,7	14,7	28,7	43,2	57,7	11,7	26,0	8. 6. 43,24				43,12			8. 7. 30,64			T.
	(c)(e)* N.P.D. 65°. 26'	41,7	56,7	11,2	26,2	41,2	55,7	10,4	8. 12. 26,16				26,00			8. 13. 13,52			T.
	(d) ε Hydræ.....	31,7	45,2	58,5	12,2	26,0	39,2	52,6	8. 38. 12,20				12,21	47,50		8. 38. 59,76			T.
	(c) α Hydræ.....	53,7	7,3	20,7	34,5	48,2	....	....	9. 19. 34,46				34,70	47,74		9. 20. 22,30			T.
	B. (w.) IX. 821..	0,0	13,6	27,0	40,7	54,7	8,1	21,7	9. 36. 40,83				40,80			9. 37. 28,42			T.
	(d) Regulus.....	4,0	18,0	31,7	....	59,7	13,0	26,8	9. 59. 45,53				45,47	47,56		10. 0. 33,12			T.
Mar. 24	Castor.....	36,3	52,1	7,7	24,0	40,1	55,7	11,7	7. 24. 23,94				23,65	49,17	1,69	7. 25. 12,81			T.
	(f)* N.P.D. 68°. 13'	1,2	16,0	30,2	45,1	59,7	14,0	28,7	7. 28. 44,99				44,85			7. 29. 34,02			T.
	Procyon.....	....	20,2	33,3	47,3	0,7	14,3	....	7. 30. 47,16				47,19	49,21		7. 31. 36,36			T.
	Pollux.....	43,9	59,2	14,3	30,1	45,5	0,7	15,7	7. 35. 29,91				29,69	49,17		7. 36. 18,87			T.
	H. C. 15159.....	33,7	48,3	2,6	17,1	31,8	46,0	0,7	7. 39. 17,17				17,03			7. 40. 6,21			T.
	* N.P.D. 69°. 26'	1,7	16,2	30,6	45,2	59,9	13,8	28,0	7. 44. 45,06				44,92			7. 45. 34,11			T.
	H. C. 16130.....	58,7	13,0	27,1	41,7	56,0	10,0	24,1	8. 6. 41,51				41,39			8. 7. 30,60			T.
	(f)* N.P.D. 78°. 3'	24,2	37,9	51,2	5,2	19,4	33,0	46,7	9. 16. 5,37				5,32			9. 16. 54,61			T.
	α Hydræ.....	52,1	5,7	19,1	33,0	46,7	0,1	13,7	9. 19. 32,90				33,14	49,29		9. 20. 22,44			T.
	h Leonis.....	34,7	48,6	2,0	15,9	29,7	43,2	57,0	9. 23. 15,87				15,84			9. 24. 5,14			T.
	B. (w.) IX. 628..	57,3	11,2	24,8	38,7	52,7	6,1	19,8	9. 27. 38,66				38,62			9. 28. 27,93			T.
	B. (w.) IX. 692..	49,1	2,8	16,1	30,1	44,0	57,3	11,0	9. 30. 30,05				30,04			9. 31. 19,35			T.
	(g) H. C. 19039.....	45,1	59,1	13,0	27,0	41,3	55,1	9,1	9. 33. 27,10				27,02			9. 34. 16,33			T.
	B. (w.) IX. 821..	57,8	11,8	25,2	39,0	53,0	6,2	20,1	9. 36. 39,02				38,99			9. 37. 28,31			T.
	B. (w.) IX. 902..	34,7	48,3	1,6	15,3	29,2	42,7	56,2	9. 40. 15,43				15,42			9. 41. 4,76			T.
	B. (w.) IX. 1011..	23,8	37,2	51,0	4,7	18,6	32,0	45,3	9. 46. 4,66				4,65			9. 46. 53,98			T.
	(h) B. (w.) IX. 1035..	....	....	....	....	33,7	47,2	0,7	9. 47. 19,95				19,94			9. 48. 9,27			T.
	Regulus.....	2,2	16,2	29,9	43,9	57,7	11,2	25,1	9. 59. 43,74				43,68	49,34		10. 0. 33,03			T.
	(i) β Leonis.....	....	....	....	....	59,2	13,0	27,0	11. 40. 45,11				45,02	49,44		11. 41. 34,48			T.
Mar. 25	(k) α Aquarii.....	....	....	7,0	20,6	34,2	47,6	1,0	21. 57. 20,63			-0,7	20,75	51,91	1,70	21. 58. 12,62			T.
Mar. 26	(i) ☉ 2 L.....	....	54,3	8,0	21,4	....	....	....	0. 21. 21,45				21,53			0. 22. 13,57			T.
	(i) Polaris.....	....	21,5	....	48,5	....	13,0	....	1. 4. 47,68				9,39						T.
	(l)(f)* N.P.D. 68°. 13'	58,0	12,4	26,9	41,3	56,1	10,2	24,9	7. 28. 41,40				41,26			7. 29. 33,80			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) 'The northern of two stars: extremely faint.'

(e) Observed for H. C. 16337: the N.P.D. is uncertain.

(h) Too soon after the preceding for the transits at the other wires.

(b) Clouded, but very steady.

(f) The N.P.D. from Circle observations.

(i) Clouds.

(c) Cloudy.

(k) Barely seen.

(d) Barely seen for cloud.

(g) 'One of less N.P.D. following.'

(l) Extremely faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.	
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.						
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.						
Mar. 26	Procyon.....	3,2	16,7	30,2	43,7	57,5	10,7	24,2	7.30.43,74	-5,0	-0,7	+15,7	43,77	52,60	1,70	7.31.36,31	T.	
	Pollux.....	40,5	55,9	11,2	26,5	42,0	57,1	12,2	7.35.26,49				26,28	52,55		7.36.18,83	T.	
	H. C. 15159.....	30,2	44,8	59,0	13,7	28,1	42,6	56,9	7.39.13,61				13,48			7.40.6,03	T.	
	(a) * N.P.D. 69°. 26'	58,2	12,2	27,0	41,2	56,1	10,1	24,2	7.44.41,28				41,14			7.45.33,70	T.	
	H. C. 16130.....	55,3	9,5	23,4	38,0	52,6	6,3	20,7	8.6.37,97				37,85			8.7.30,44	T.	
	(b) β Leonis.....	....	....	27,7	41,8	56,0	9,7	23,7	11.40.41,83				41,74	52,72		11.41.34,58	T.	
	(b) Polaris SP.....	19,5	....	....	....	....	....	....	13.3.30,76				61,14				T.	
Mar. 29	☉ 1 L.....	21,1	34,5	48,0	1,6	15,5	28,7	42,1	0.30.1,64	-5,5		+14,3	1,60		1,67	0.30.58,90	T.	
	☉ 2 L.....	29,7	43,2	56,7	10,5	24,0	37,2	50,7	0.32.10,28				10,24			0.33.7,54	T.	
	Polaris.....	....	13,5	50,0	41,5	29,0	....	51,5	1.4.40,01				2,57			1.4.59,91	T.	
	α Arietis.....	11,2	25,7	40,1	55,0	9,8	24,1	38,5	1.57.54,91				54,68	57,43		1.58.52,08	T.	
	H. C. 16130.....	50,2	4,7	18,7	33,1	47,7	1,7	15,8	8.6.33,13				32,92			8.7.30,75	T.	
	* N.P.D. 78°. 3'.	15,3	29,1	42,7	56,7	10,8	24,0	38,1	9.15.56,67				56,53			9.16.54,44	T.	
	α Hydræ.....	43,7	57,1	10,7	24,6	38,2	51,7	5,1	9.19.24,44				24,57	57,80		9.20.22,48	T.	
	(c) h Leonis.....	26,6	40,0	53,7	7,7	21,2	34,7	48,5	9.23.7,49				7,37			9.24.5,28	T.	
	B. (w.) ix. 692..	40,7	54,2	7,8	21,6	35,4	48,9	2,7	9.30.21,61				21,50			9.31.19,42	T.	
	H. C. 19036.....	32,0	46,1	0,1	14,6	28,7	42,8	56,8	9.33.14,44				14,25			9.34.12,18	T.	
	B. (w.) ix. 821..	49,7	3,2	16,7	30,6	44,4	58,0	11,6	9.36.30,60				30,48			9.37.28,41	T.	
	B. (w.) ix. 902..	26,3	39,7	53,1	7,1	21,0	34,2	47,8	9.40.7,03				6,92			9.41.4,85	T.	
	B. (w.) ix. 1035..	30,8	44,3	57,7	11,7	25,3	38,7	52,2	9.47.11,53				11,43			9.48.9,37	T.	
	B. (w.) ix. 1137..	35,3	49,1	2,8	16,7	30,7	44,1	57,8	9.52.16,64				16,51			9.53.14,46	T.	
	B. (w.) ix. 1243..	5,7	19,2	33,1	47,2	1,2	14,8	28,8	9.56.47,14				46,98			9.57.44,93	T.	
	Regulus.....	53,7	7,6	21,2	35,5	49,3	2,8	16,6	9.59.35,24				35,09	57,89		10.0.33,05	T.	
	δ Leonis.....	36,7	51,2	5,3	20,2	34,9	49,1	3,4	11.5.20,11				19,89	58,13		11.6.17,92	T.	
	(d)(e) β Leonis.....	54,6	8,7	22,4	36,8	50,7	4,7	18,6	11.40.36,64				36,46	58,01		11.41.34,53	T.	
	(d) β Corvi.....	59,2	13,8	28,2	43,2	57,8	12,2	26,7	12.25.43,01				43,27	58,25		12.26.41,40	T.	
	B. (w.) xii. 515..	24,1	37,6	50,7	4,2	18,1	31,1	44,8	12.30.4,37				4,36			12.31.2,49	T.	
	B. (w.) xii. 562..	9,7	23,1	36,3	50,4	4,1	17,2	31,0	12.32.50,25				50,36			12.33.48,50	T.	
	B. (w.) xii. 613..	48,1	1,7	15,1	29,0	42,7	56,1	9,4	12.35.28,87				28,98			12.36.27,12	T.	
	(d)(f) Polaris SP.....	15,0	58,5	31,0	....	12,0	....	....	13.3.23,72				63,10			13.5.1,27	T.	
	Mar. 30	(f) ☉ 1 L.....	57,2	10,8	24,1	37,7	51,7	4,7	18,2	0.33.37,77				37,71		1,63	0.34.36,67	T.
		(f) ☉ 2 L.....	6,1	19,4	32,9	46,7	0,2	13,7	27,2	0.35.46,60				46,54			0.36.45,50	T.
		(f) Polaris.....	27,0	16,0	51,0	....	34,0	....	50,0	1.4.40,96				3,52			1.5.2,51	T.
		(g) α Arietis.....	....	24,0	38,2	53,0	8,1	22,6	....	1.57.53,18				52,95	59,16		1.58.52,01	T.
		Procyon.....	56,6	9,7	23,3	37,0	50,7	3,8	17,6	7.30.36,96				36,89	59,41		7.31.36,32	T.
Pollux.....		33,8	49,2	4,2	19,8	35,3	50,2	5,5	7.35.19,72				19,43	59,33		7.36.18,87	T.	
(h) H. C. 15159.....		23,7	38,0	52,1	6,7	21,6	35,6	50,0	7.39.6,82				6,60			7.40.6,04	T.	
* N.P.D. 69°. 26'		51,7	6,0	20,1	34,8	49,2	3,4	18,0	7.44.34,74				34,52			7.45.33,97	T.	
54 Cancri.....		9,0	23,1	36,7	51,0	5,2	19,0	32,8	8.41.50,97				50,80			8.42.50,31	T.	
(i) * N.P.D. 78°. 3'.		....	....	41,1	55,1	9,1	22,7	36,1	9.15.55,07				54,93			9.16.54,48	T.	
(k) α Hydræ.....		41,7	55,3	9,1	22,7	36,6	49,7	3,4	9.19.22,64				22,77	59,58		9.20.22,32	T.	
h Leonis.....		24,7	38,1	51,8	5,8	19,7	33,0	46,7	9.23.5,69				5,57			9.24.5,13	T.	
B. (w.) ix. 902..		24,2	38,1	51,4	5,2	19,1	32,7	46,1	9.40.5,26				5,15			9.41.4,73	T.	
(l) B. (w.) ix. 1011..		....	27,2	40,7	54,7	8,1	21,7	....	9.45.54,48				54,38			9.46.53,96	T.	
B. (w.) ix. 1035..		....	42,7	56,2	9,8	23,7	37,1	....	9.47.9,90				9,80			9.48.9,39	T.	
(m) B. (w.) ix. 1148..		57,0	10,7	24,0	37,8	51,5	4,7	18,7	9.52.37,77				37,68			9.53.37,27	T.	
(n) B. (w.) ix. 1231..		23,0	36,7	50,2	4,1	18,1	31,6	45,3	9.56.4,14				4,01			9.57.3,61	T.	
Regulus.....		52,1	5,7	19,6	33,7	47,6	1,2	14,7	9.59.33,51				33,36	59,62		10.0.32,96	T.	
B. (w.) x. 37.....		46,5	0,0	13,2	27,0	40,7	54,1	7,6	10.2.27,02				26,94			10.3.26,54	T.	
B. (w.) x. 110....		22,7	36,2	49,8	3,7	17,3	30,6	44,0	10.6.3,47				3,38			10.7.2,99	T.	
B. (w.) x. 155....		58,2	11,7	25,1	38,8	52,7	5,9	19,2	10.8.38,80				38,72			10.9.38,33	T.	
B.A.C. 3529.....		11,0	24,3	37,7	51,7	5,6	18,7	32,1	10.11.51,58				51,49			10.12.51,10	T.	
B. (w.) x. 261....		53,8	7,5	20,8	34,7	48,1	1,6	15,0	10.14.34,50				34,44			10.15.34,06	T.	
B. (w.) x. 317...		59,0	13,1	26,8	41,1	55,1	8,7	22,7	10.17.40,92				40,75			10.18.40,37	T.	
B. (w.) x. 433....		4,2	18,1	31,7	45,7	59,8	13,4	27,3	10.23.45,74				45,59			10.24.45,22	T.	
(n) β Leonis.....		53,1	7,2	20,7	35,1	49,2	2,7	6,7	11.40.34,96				34,78	59,69		11.41.34,50	T.	
B. (w.) xi. 1032..		8,2	21,8	35,2	48,9	2,7	15,7	29,1	11.59.48,80				48,82			12.0.48,56	T.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s.349$ ,  $-26^s.905$ ,  $-13^s.633$ ,  $+0^s.010$ ,  $+13^s.656$ ,  $+26^s.895$ ,  $+40^s.327$ .

(a) Extremely faint. (b) Cloudy. Quite overcast afterwards.  
 mination of the field. (f) Great motion. (g) Very faint.  
 (t) 'The south-preceding of two.' (m) 'Another of greater N.P.D.'

(c) The counting was 20% slow. (d) Much diffused.  
(h) Disturbance. (i) Delay by the lamp being out.  
(n) Corrected by  $-1\%$  for error in counting.

(e) Bad illu-  
(k) Blazing.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Mar. 30	B. (w.) XII. 62...	2,8	16,2	29,7	43,6	57,1	10,6	24,0	12. 3. 43,43	-5,5	-0,7	+14,3	43,54		1,63	12. 4. 43,28			T.
	B. (w.) XII. 103.	49,2	2,7	16,0	29,7	43,5	56,7	10,1	12. 6. 29,70				29,71			12. 7. 29,45			T.
	(a) $\alpha$ Andromedæ...	....	....	30,2	45,6	1,7	16,4	31,8	23. 59. 45,86				45,57	60,46	1,58				T.
Mar. 31	(b) $\odot$ 1 L.....	33,7	47,1	0,6	14,4	28,1	41,4	55,0	0. 37. 14,33				14,27			0. 38. 14,77			T.
	$\odot$ 2 L.....	42,4	56,0	9,4	23,4	36,8	50,1	3,7	0. 39. 23,11				23,05			0. 40. 23,55			T.
Apr. 1	(c) $\odot$ 1 L.....	10,2	23,7	37,4	50,9	4,7	18,0	31,6	0. 40. 50,93			-2,6	50,78		1,63	0. 41. 52,96			T.
	$\odot$ 2 L.....	19,2	32,7	46,2	59,8	13,7	26,9	40,5	0. 42. 59,86				59,71			0. 44. 1,89			T.
	Procyon.....	53,5	6,7	20,1	33,7	47,7	0,7	14,3	7. 30. 33,81				33,65	62,62		7. 31. 36,29			T.
	Pollux.....	30,7	45,7	0,7	16,4	32,1	47,1	2,2	7. 35. 16,42				15,99	62,73		7. 36. 18,64			T.
	$\epsilon$ Hydræ.....	16,4	30,0	43,4	57,2	11,0	24,2	37,6	8. 37. 57,12				56,94	62,65		8. 38. 59,66			T.
	54 Cancri.....	5,7	19,7	33,7	47,8	2,1	15,7	29,7	8. 41. 47,77				47,49			8. 42. 50,21			T.
	(d) * N.P.D. 103°. 8'	11,2	25,0	38,4	52,7	6,3	20,2	34,0	8. 48. 52,54				52,67			8. 49. 55,40			T.
	Regulus.....	49,2	2,8	16,4	30,6	44,6	58,1	11,8	9. 59. 30,50				30,25	62,71		10. 0. 33,06			T.
	$\beta$ Corvi.....	54,7	9,2	23,7	38,3	53,2	7,3	22,1	12. 25. 38,22				38,44	63,10		12. 26. 41,42			T.
Apr. 2	(e) $\epsilon$ Hydræ.....	14,7	28,5	41,6	55,3	9,2	22,6	36,1	8. 37. 55,43				55,25	64,32	1,65				T.
	Regulus.....	47,3	1,2	14,6	28,7	42,7	56,2	10,2	9. 59. 28,70				28,45	64,50					T.
Apr. 5	(e) $\epsilon$ Hydræ.....	10,1	23,6	36,7	50,7	4,3	17,7	31,1	8. 37. 50,60			+12,1	50,32	69,21	1,61	8. 38. 59,64			T.
	(f) 54 Cancri.....	59,5	13,1	27,1	41,2	55,3	9,0	23,1	8. 41. 41,18				40,81			8. 42. 50,13			T.
	Regulus.....	42,3	56,1	10,0	24,0	37,8	51,4	5,2	9. 59. 23,83				23,49	69,43		10. 0. 32,90			T.
	$\delta$ Leonis.....	25,5	40,0	54,2	9,0	23,7	37,7	52,2	11. 5. 8,76				8,34	69,65		11. 6. 17,82			T.
	$\beta$ Leonis.....	43,6	57,3	11,2	25,4	39,6	53,2	7,2	11. 40. 25,36				24,98	69,48		11. 41. 34,51			T.
Apr. 7	(g) $\odot$ 1 L.....	53,2	6,7	20,2	34,0	48,0	1,2	14,7	1. 2. 34,00			-3,0	33,70		1,61	1. 3. 45,67			T.
	$\odot$ 2 L.....	2,4	....	....	....	....	....	23,9	1. 4. 43,16				42,86			1. 5. 54,83			T.
	(h) * N.P.D. 103°. 3'	....	....	....	45,2	59,0	12,2	26,2	8. 47. 44,89				44,88			8. 48. 57,37			T.
	$\alpha$ Hydræ.....	29,1	42,7	56,2	9,7	23,7	37,0	50,4	9. 19. 9,83				9,75	72,50		9. 20. 22,28			T.
	B. (w.) IX. 657...	52,9	6,2	20,0	33,9	47,5	1,0	14,5	9. 28. 33,71				33,39			9. 29. 45,93			T.
	(i) H. C. 18995.....	2,2	16,4	30,2	44,7	59,2	13,3	27,5	9. 31. 44,79				44,37			9. 32. 56,91			T.
	(k) $\psi$ Leonis.....	49,8	3,7	17,4	31,4	45,7	59,7	13,3	9. 34. 31,57				31,18			9. 35. 43,72			T.
	H. C. 19229.....	59,7	13,8	27,6	41,7	55,7	9,2	23,0	9. 39. 41,52				41,14			9. 40. 53,69			T.
	B. (w.) IX. 963...	32,1	45,8	59,2	13,0	27,0	40,2	53,8	9. 43. 13,01				12,69			9. 44. 25,24			T.
	B. (w.) IX. 1017...	15,3	29,0	42,5	56,2	10,0	23,4	37,0	9. 45. 56,20				55,88			9. 47. 8,44			T.
	(l) B. (w.) IX. 1074...	2,3	16,6	30,3	44,2	58,2	12,0	25,9	9. 48. 44,21				43,84			9. 49. 56,40			T.
	$\pi$ Leonis.....	....	47,2	1,0	14,7	28,6	42,1	....	9. 51. 14,72				14,39			9. 52. 26,95			T.
	H. C. 19617.....	18,7	32,2	45,7	59,6	13,2	26,7	40,0	9. 53. 59,45				59,13			9. 55. 11,70			T.
	B. (w.) IX. 1243...	....	5,0	18,7	32,7	46,7	0,6	....	9. 56. 32,74				32,36			9. 57. 44,93			T.
	Regulus.....	39,2	52,9	6,7	20,7	34,6	48,3	2,0	9. 59. 20,62				20,26	72,63		10. 0. 32,84			T.
	H. C. 19857.....	59,2	12,7	26,2	40,2	53,8	7,1	20,7	10. 3. 39,98				39,66			10. 4. 52,24			T.
	B. (w.) X. 128...	2,7	16,6	30,7	44,4	58,7	12,2	26,0	10. 6. 44,47				44,10			10. 7. 56,68			T.
	(m) B. (w.) X. 169...	34,6	48,3	1,7	15,5	29,2	42,7	56,4	10. 9. 15,49				15,17			10. 10. 27,75			T.
	B. (w.) X. 216...	11,7	25,3	38,6	52,4	6,0	19,3	32,8	10. 11. 52,30				52,02			10. 13. 4,61			T.
	(n) H. C. 20144.....	59,2	13,2	27,0	41,2	55,4	9,1	23,0	10. 14. 41,15				40,75			10. 15. 53,34			T.
	45 Leonis.....	0,2	13,7	27,6	41,4	55,2	8,7	22,4	10. 18. 41,31				40,96			10. 19. 53,55			T.
	$\delta$ Leonis.....	22,3	36,7	51,0	5,7	20,3	34,6	49,0	11. 5. 5,66				5,22	72,75		11. 6. 17,87			T.
	$\beta$ Leonis.....	40,3	54,2	8,0	22,3	36,3	50,0	4,0	11. 40. 22,16				21,76	72,70		11. 41. 34,45			T.
	$\beta$ Corvi.....	45,2	59,7	14,1	29,0	43,7	58,0	12,3	12. 25. 28,86				28,92	72,64		12. 26. 41,66			T.
	Polaris SP.....	56,5	41,0	15,0	4,0	56,0	34,0	19,0	13. 3. 6,50				46,88						T.
	(o) Spica.....	34,4	48,2	1,7	15,7	29,5	43,1	56,6	13. 16. 15,60				15,55			13. 17. 28,34			T.
Apr. 8	(p) $\odot$ 1 L.....	31,1	44,5	58,2	12,0	25,7	39,0	52,8	1. 6. 11,90				11,60		1,65	1. 7. 25,19			T.
	$\odot$ 2 L.....	....	53,8	7,0	21,0	34,7	....	....	1. 8. 20,91				20,61			1. 9. 34,20			T.
	$\epsilon$ Hydræ.....	5,2	18,7	32,1	45,7	59,6	12,7	26,3	8. 37. 45,76				45,46	74,02		8. 38. 59,56			T.
	* N.P.D. 103°. 3'	2,0	15,7	29,0	43,1	57,0	10,5	24,7	8. 47. 43,14				43,13			8. 48. 57,25			T.
	(d) * N.P.D. 103°. 8'	....	....	....	41,1	55,1	8,8	22,7	8. 48. 41,17				41,16			8. 49. 55,29			T.
	H. C. 18350.....	1,2	15,0	28,7	42,7	56,7	9,9	23,9	9. 9. 42,58				42,23			9. 10. 56,37			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40°, 349, - 26°, 905, - 13°, 633, + 0°, 010, + 13°, 656, + 26°, 895, + 40°, 327.

(a) Not seen earlier on account of its faintness. (b) Great unsteadiness. (c) Boisterous wind: the clock scarcely heard. (d) 'A fainter south-preceding.' (e) Faint from cloud. (f) Much obscured and observed doubtfully. (g) Cloudy: not seen at the other wires. (h) Visible for a short time through a break in the clouds. The N.P.D. is approximate, but may not be exact to the nearest minute. (i) 'Another south-following.' (k) Wire III was set down 18,4 and altered at the time. (l) 'A fainter preceding.' (m) 'One precedes.' (n) Cloudy. (o) Much diffusion. (p) Cloudy. The afternoon showery.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Apr. 8	H. C. 18481.....	32,7	47,1	1,7	16,0	30,7	44,7	59,2	9. 14. 16,02	-5,5	-3,0	+12,1	15,58		1,65	9. 15. 29,73			T.
	H. C. 18573.....	32,2	46,7	0,8	14,8	29,0	43,1	57,1	9. 17. 14,81				14,41			9. 18. 28,56			T.
	$\alpha$ Hydræ.....	40,7	54,6	8,2	21,7	35,2	....	....	9. 19. 8,08				8,00	74,24		9. 20. 22,15			T.
	(a) B. (w.) IX. 496 ..	25,0	38,7	52,7	6,5	20,6	34,2	48,1	9. 22. 6,54				6,16			9. 23. 20,32			T.
	H. C. 18815.....	41,6	55,7	9,7	23,8	38,0	51,9	6,0	9. 25. 23,81				23,41			9. 26. 37,57			T.
	H. C. 18903.....	50,8	4,8	18,5	32,2	46,3	0,1	13,8	9. 28. 32,36				32,00			9. 29. 46,16			T.
	(b) H. C. 19005.....	40,0	54,2	8,6	23,0	37,1	....	....	9. 32. 8,58				8,16			9. 33. 22,33			T.
	(c) B. (w.) XIII. 256 ..	18,3	31,8	45,3	59,3	13,2	26,7	40,3	13. 14. 59,28				59,23			13. 16. 13,65			T.
Apr. 9	(d) $\alpha$ Hydræ.....	25,6	39,2	52,7	6,7	20,2	33,7	47,2	9. 19. 6,47				6,39	75,84	1,68				T.
Apr. 12	(e) $\odot$ 1 L.....	4,6	18,2	31,6	45,3	59,3	13,0	26,3	1. 20. 45,47			+13,6	45,22		1,65	1. 22. 5,50			T.
	$\odot$ 2 L.....	14,0	27,6	...	55,1	9,0	22,1	35,8	1. 22. 54,97				54,72			1. 24. 15,01			T.
	(f) $\alpha$ Hydræ.....	34,2	47,8	1,3	15,1	28,7	42,1	9. 19. 1,41				1,42	80,77			9. 20. 22,25			T.
	$\delta$ Leonis.....	14,2	28,6	42,8	57,6	11,9	26,2	40,7	11. 4. 57,43				57,04	80,90		11. 6. 17,99			T.
	$\beta$ Leonis.....	31,7	45,7	59,7	13,6	27,7	41,6	55,6	11. 40. 13,66				13,32	81,12		11. 41. 34,32			T.
Apr. 13	(g) $\odot$ 1 L.....	43,6	57,3	10,7	24,5	38,4	52,0	5,5	1. 24. 24,57				24,32		1,65	1. 25. 46,25			T.
	$\odot$ 2 L.....	53,2	7,0	20,1	34,1	48,0	....	....	1. 26. 34,13				33,88			1. 27. 55,81			T.
	Regulus.....	29,2	43,1	56,5	10,6	24,6	38,3	52,1	9. 59. 10,62				10,32	82,51		10. 0. 32,84			T.
	(h) $\beta$ Corvi.....	...	...	...	...	47,8	2,3	12. 25. 18,65				18,82	82,75						T.
	(i) Spica.....	24,6	38,2	51,7	5,7	19,6	32,9	46,5	13. 16. 5,60				5,64	82,70		13. 17. 28,38			T.
	B. (w.) XIII. 1023 ..	56,0	9,6	23,1	37,2	51,1	4,6	18,2	13. 56. 37,12				37,19			13. 57. 59,98			T.
	B. (w.) XIV. 62... ..	41,1	54,7	8,2	22,0	35,8	49,2	2,8	14. 3. 21,97				21,99			14. 4. 44,79			T.
	Arcturus.....	53,2	7,5	21,6	36,2	50,7	4,7	19,1	14. 7. 36,14				35,76	82,81		14. 8. 58,56			T.
Apr. 14	(k) Regulus.....	...	...	54,9	8,9	23,1	36,6	50,5	9. 59. 9,01				8,71	84,11	1,68	10. 0. 32,90			T.
	(i) Spica.....	22,7	36,7	50,0	3,8	17,6	31,2	44,6	13. 16. 3,80				3,84	84,51		13. 17. 28,26			T.
	B. (w.) XIII. 326 ..	41,1	54,6	8,0	21,7	35,6	49,1	2,6	13. 19. 21,81				21,83			13. 20. 46,25			T.
	B. (w.) XIII. 395 ..	9,2	22,7	36,1	49,8	3,6	16,8	30,4	13. 22. 49,80				49,68			13. 24. 14,11			T.
	H. C. 25106.....	19,8	33,6	47,0	0,8	14,4	27,8	41,2	13. 26. 0,65				0,54			13. 27. 24,97			T.
	B. (w.) XIII. 511 ..	4,7	18,7	32,1	46,3	0,6	14,1	27,7	13. 28. 46,32				46,41			13. 30. 10,85			T.
	B. (w.) XIII. 590 ..	37,6	50,8	4,5	18,1	31,7	45,1	58,7	13. 33. 18,07				18,05			13. 34. 42,49			T.
	H. C. 25983.....	11,2	25,0	38,6	52,5	6,3	20,0	33,6	14. 1. 52,46				52,53			14. 3. 17,01			T.
	B. (w.) XIV. 88 ..	46,5	59,9	13,7	27,2	41,1	54,4	8,0	14. 4. 27,26				27,28			14. 5. 51,76			T.
	Arcturus.....	51,6	5,9	20,1	34,5	49,1	3,2	17,2	14. 7. 34,51				34,13	84,45		14. 8. 58,61			T.
Apr. 17	Polaris.....	0,0	39,0	19,0	8,5	52,5	32,0	16,5	1. 4. 6,79			-3,4	24,78		1,60	1. 4. 55,36			T.
Apr. 18	(l) $\odot$ 1 L.....	3,3	17,2	30,3	44,4	58,3	12,1	26,0	1. 42. 44,51				44,20			1. 44. 14,83			T.
	$\odot$ 2 L.....	13,6	27,2	40,7	54,7	9,0	22,4	36,2	1. 44. 54,83				54,52			1. 46. 25,15			T.
	Aldebaran .....	15,3	29,6	43,3	57,6	12,1	25,9	39,7	4. 25. 57,64				57,28	90,79		4. 27. 28,09			T.
	Castor .....	10,0	25,6	41,7	58,1	13,7	29,5	7. 23. 41,82				41,24	91,10			7. 25. 12,25			T.
	Procyon.....	24,7	38,2	51,6	5,3	19,0	32,2	45,7	7. 30. 5,24				5,01	90,98		7. 31. 36,02			T.
	Pollux .....	2,0	17,5	32,6	48,0	3,4	18,3	33,7	7. 34. 47,93				47,43	90,98		7. 36. 18,45			T.
Apr. 20	(m) $\odot$ 1 L.....	26,2	40,1	...	...	22,0	35,4	...	1. 50. 7,75				7,44		1,55	1. 51. 41,18			T.
	(k) Aldebaran .....	12,2	26,7	...	...	8,7	...	36,4	4. 25. 54,46				54,10	93,96		4. 27. 28,01			T.
	(n) $\alpha$ Hydræ.....	7,0	20,7	34,0	47,7	1,6	14,8	28,4	9. 18. 47,75				47,75	94,32		9. 20. 21,97			T.
	(o) $\epsilon$ Leonis.....	12,1	26,9	41,5	56,5	11,3	26,0	40,7	9. 35. 56,43				56,00			9. 37. 30,24			T.
	(n)(p) $\delta$ Leonis.....	0,7	15,0	29,4	44,1	58,7	12,8	27,3	11. 4. 44,00				43,59	94,29		11. 6. 17,93			T.
	(n) $\beta$ Leonis.....	18,6	32,7	46,2	0,3	14,7	28,5	42,1	11. 40. 0,44				0,18	94,22		11. 41. 34,56			T.
	(q) Polaris SP.....	36,5	20,0	55,0	43,0	...	...	...	13. 2. 44,85				28,50			13. 5. 2,96			T.
Apr. 23	(m)(r) $\odot$ 1 L.....	...	...	...	...	29,3	43,1	57,0	2. 1. 15,43			-2,6	+12,4	15,10		2. 2. 53,50			T.
	$\odot$ 2 L.....	...	...	...	26,0	40,2	54,0	7,5	2. 3. 26,15				25,82			2. 5. 4,22			T.
	$\alpha$ Hydræ.....	2,4	16,0	29,4	43,2	56,9	10,3	23,8	9. 18. 43,14				43,09	98,94					T.
	$\epsilon$ Leonis.....	7,6	22,2	36,8	51,8	6,7	21,4	36,1	9. 35. 51,80				51,38			9. 37. 30,29			T.
	Regulus.....	12,9	26,6	40,2	54,2	8,1	21,7	35,4	9. 58. 54,16				53,83	98,88					T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) The noted times have been increased 20". (b) 'Another preceding.' Wires V and VI have each been increased 20". (c) Mistaken for Spica: the sky cloudy. (d) Scarcely seen through cloud. The counting was 3" slow. (e) Unsteadiness and passing clouds. (f) Just after clearing. (g) Clouds passing. (h) Clouded at the other wires. A weight of two-sevenths is given to the clock-error by this observation. (i) Great motion and no definition. (k) Cloudy. (l) Clouded, fringed, and very unsteady. The counting for 1 L was 1" slow. (m) Without the dark glass. (n) Faint from cloud. (o) Disturbance. (p) Steady. (q) Interruption by cloud. (r) The times for 1 L have been increased 1".



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.			Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII				Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.	h.	m.	s.	"	"	"				s.	s.	s.	
Apr. 26	δ Leonis .....	50,7	5,2	19,6	34,2	48,8	3,0	17,6	11.	4.	34,16	-5,5	-2,6	+12,4	33,75	104,07	1,70	11.	6.	17,84	T.
	φ Leonis .....	47,7	1,1	14,5	28,1	41,7	55,0	8,4	11.	7.	28,07				27,94			11.	9.	12,03	T.
	δ Crateris .....	34,7	48,6	2,5	16,3	30,3	44,1	58,0	11.	10.	16,36				16,39			11.	12.	0,48	T.
	B. (w.) XI. 295 ..	23,2	36,9	50,4	4,2	18,0	31,4	45,0	11.	16.	4,16				3,87			11.	17.	47,97	T.
	(a) B. (w.) XI. 345 ..	....	1,2	14,7	28,3	42,1	55,6	....	11.	18.	28,38				28,09			11.	20.	12,19	T.
	B. (w.) XI. 445 ..	32,0	....	59,1	....	26,3	39,8	53,3	11.	24.	12,68				12,41			11.	25.	56,52	T.
	B. (w.) XI. 562 ..	50,2	4,0	17,1	31,0	44,3	57,7	11,1	11.	30.	30,77				30,61			11.	32.	14,73	T.
	B. (w.) XI. 609 ..	30,0	43,7	56,6	10,4	24,1	37,3	50,7	11.	33.	10,40				10,18			11.	34.	54,30	T.
	β Leonis .....	8,3	22,6	36,5	50,6	4,6	18,6	32,6	11.	39.	50,54				50,17	104,19		11.	41.	34,30	T.
	(b) B. (w.) XI. 777 ..	30,8	44,2	57,9	11,5	25,1	38,7	52,0	11.	43.	11,45				11,22			11.	44.	55,35	T.
	B. (w.) XI. 826 ..	32,9	46,2	59,4	13,3	27,1	40,4	54,0	11.	46.	13,33				13,06			11.	47.	57,20	T.
	(c) B. (w.) XI. 875 ..	34,8	48,3	1,7	15,4	29,1	42,3	56,0	11.	49.	15,37				15,12			11.	50.	59,26	T.
	B. (w.) XI. 940 ..	30,2	43,6	57,1	10,8	24,5	37,8	51,2	11.	53.	10,74				10,49			11.	54.	54,63	T.
	(d) β Corvi .....	....	....	42,2	57,3	12,1	26,4	41,1	12.	24.	57,25				57,34	104,21		12.	26.	41,52	T.
	Polaris SP. ....	30,5	15,0	49,5	38,0	29,0	5,5	....	13.	2.	39,50				19,57						T.
	Spica .....	3,2	16,7	30,3	44,2	58,2	11,5	25,1	13.	15.	44,17				44,15	104,24		13.	17.	28,39	T.
	η Bootis .....	15,7	30,1	44,1	58,6	13,0	2,9	41,2	13.	45.	58,52				58,13			13.	47.	42,41	T.
	ε Bootis .....	....	21,1	36,1	51,6	7,0	22,1	37,0	14.	36.	51,55				51,07	104,27		14.	38.	35,41	T.
	α <sup>2</sup> Libræ .....	20,2	34,2	47,8	2,2	16,1	29,9	44,0	14.	41.	2,05				2,09	104,42		14.	42.	46,43	T.
	α Serpentis .....	38,2	51,6	5,2	18,8	32,7	46,1	59,4	15.	35.	18,86				18,59	104,34		15.	37.	3,00	T.
	β <sup>1</sup> Scorpii .....	27,8	41,9	56,1	10,6	25,1	39,1	53,2	15.	55.	10,54				10,60			15.	56.	55,03	T.
	δ Ophiuchi .....	15,1	28,6	42,0	55,5	9,1	22,7	36,0	16.	4.	55,57				55,46	104,39		16.	6.	39,90	T.
Apr. 27	(e) ☉ 1 L. ....	30,1	44,0	57,7	11,7	25,4	39,6	53,4	2.	16.	11,70				11,35		1,71	2.	17.	56,50	T.
	☉ 2 L. ....	41,2	55,3	9,0	23,0	36,9	50,7	4,8	2.	18.	22,98				22,63			2.	20.	7,79	T.
	Rigel .....	....	14,8	28,1	42,1	55,9	9,2	22,8	5.	5.	42,02				41,98	105,43		5.	7.	27,33	T.
	α Orionis .....	46,1	59,6	12,7	26,8	40,3	53,8	7,2	5.	45.	26,66				26,38	105,47		5.	47.	11,78	T.
	(f) Regulus .....	....	....	33,7	47,2	1,2	14,8	28,6	9.	58.	47,31				46,98	105,68		10.	0.	32,68	T.
	δ Leonis .....	49,1	3,6	17,7	32,5	47,0	1,3	15,7	11.	4.	32,41				32,00	105,82		11.	6.	17,78	T.
	β Corvi .....	11,7	26,5	40,7	55,6	10,5	24,8	39,3	12.	24.	55,59				55,68	105,87		12.	26.	41,56	T.
	Spica .....	1,6	15,2	28,7	42,7	56,5	9,7	23,7	13.	15.	42,58				42,56	105,83		13.	17.	28,50	T.
	(g) 3 Bootis .....	24,1	39,7	54,1	9,6	24,6	39,4	54,7	13.	38.	9,46				9,00			13.	39.	54,96	T.
	Arcturus .....	30,2	44,5	58,7	13,2	27,5	41,6	55,9	14.	7.	13,08				12,68	106,00		14.	8.	58,68	T.
	ε Bootis .....	....	19,2	34,3	49,7	5,2	20,1	....	14.	36.	49,70				49,22	106,12		14.	38.	35,25	T.
	α <sup>2</sup> Libræ .....	18,6	32,7	46,3	0,4	14,8	28,4	42,3	14.	41.	0,50				0,54	105,98		14.	42.	46,58	T.
β Libræ .....	40,5	54,1	7,6	21,4	35,2	48,7	2,1	15.	7.	21,37				21,34			15.	9.	7,41	T.	
β <sup>1</sup> Scorpii .....	26,0	40,3	54,4	9,1	23,3	37,2	51,3	15.	55.	8,80				8,86			15.	56.	54,99	T.	
δ Ophiuchi .....	13,4	26,9	40,3	54,0	7,7	20,8	34,3	16.	4.	53,91				53,80	106,06		16.	6.	39,94	T.	
Apr. 28	(h) ☉ 1 L. ....	15,2	29,2	42,6	56,9	11,1	24,8	38,4	2.	19.	56,89				56,55			2.	21.	43,42	T.
	☉ 2 L. ....	26,7	40,7	54,2	8,7	22,6	36,2	50,1	2.	22.	8,46				8,12			2.	23.	54,99	T.
Apr. 30	ε Hydræ .....	28,1	41,7	55,0	8,7	22,6	36,0	49,4	8.	38.	8,79	-3,4	+10,3		8,38	50,78	1,72	8.	38.	59,18	T.
	ε Leonis .....	55,6	10,3	24,8	39,8	54,8	9,4	24,2	9.	36.	39,85				39,31			9.	37.	30,18	T.
	(i) Regulus .....	....	14,7	28,3	42,2	56,3	9,6	23,5	9.	59.	42,21				41,75	50,87		10.	0.	32,65	T.
	δ Leonis .....	44,1	58,5	12,5	27,4	42,1	56,2	10,6	11.	5.	27,35				26,82	50,97		11.	6.	17,80	T.
	δ Crateris .....	28,0	41,7	55,6	9,4	23,7	37,3	51,1	11.	11.	9,55				9,43			11.	12.	0,41	T.
	H. C. 21696 .....	48,4	1,7	15,1	28,8	42,7	56,0	9,4	11.	15.	28,87				28,49			11.	16.	19,48	T.
	83 Leonis np. ....	48,6	1,9	15,2	29,0	42,7	56,0	9,4	11.	18.	28,97				28,60			11.	19.	19,59	T.
	(k) ε Leonis .....	....	31,4	44,7	58,2	12,0	25,2	....	11.	21.	58,30				58,03			11.	22.	49,03	T.
	B. (w.) XI. 458 ..	18,2	31,7	45,2	59,0	12,5	26,0	39,3	11.	25.	58,85				58,46			11.	26.	49,46	T.
	(l) H. C. 22032 .....	15,0	28,3	41,6	55,3	9,0	22,3	35,7	11.	28.	55,31				54,99			11.	29.	45,99	T.
	B. (w.) XI. 583 ..	53,8	7,3	20,6	34,3	48,0	1,1	14,6	11.	32.	34,24				33,92			11.	33.	24,93	T.
	H. C. 22218 .....	59,7	13,2	26,4	40,2	54,0	7,1	20,4	11.	36.	40,14				39,82			11.	37.	30,83	T.
	β Leonis .....	2,0	16,0	29,6	44,0	58,0	11,7	25,6	11.	40.	43,84				43,34	51,00		11.	41.	34,36	T.
	(m) B. (w.) XI. 777 ..	24,1	37,7	51,0	4,6	18,3	31,7	45,1	11.	44.	4,64				4,27			11.	44.	55,29	T.
	B. (w.) XI. 826 ..	26,0	39,3	53,0	6,6	20,3	33,7	47,0	11.	47.	6,56				6,16			11.	47.	57,19	T.
	(n) B. (w.) XI. 940 ..	23,7	37,1	50,2	4,1	17,8	31,0	44,4	11.	54.	4,04				3,65			11.	54.	54,68	T.
	B. (w.) XI. 998 ..	53,1	6,5	19,7	33,6	47,1	0,3	14,0	11.	57.	33,47				33,19			11.	58.	24,23	T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40<sup>s</sup>.349, - 26<sup>s</sup>.905, - 13<sup>s</sup>.633, + 0<sup>s</sup>.010, + 13<sup>s</sup>.656, + 26<sup>s</sup>.895, + 40<sup>s</sup>.327.

April 30, 6<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

- (a) The observer suspected the counting to be 1<sup>s</sup> fast; and as, by comparison with Bessel, the recorded time was also 1<sup>m</sup> in excess, 61<sup>s</sup> have been deducted.  
 (b) 'The south-preceding of two.' (c) 'The following of two.' (d) The counting was 3<sup>s</sup> slow. (e) Fringed and extremely unsteady.  
 The last five wires of 1 L. have been increased 20<sup>s</sup>. (f) Cloudy. (g) Mistaken for another star. (h) Fringed. (i) The noted times, except that at wire II, have been corrected by -1<sup>s</sup>, the counting being 1<sup>s</sup> fast. The observer was completely disturbed by noise at the first three times.  
 (k) Corrected by +1<sup>s</sup> for error in counting. (l) 'One of Mag. 9 north-following.' (m) 'The south-preceding of two.' (n) The last three wires have been corrected by -20<sup>s</sup>.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Apr. 30	10 Virginis.....	39,2	53,6	6,0	19,6	33,2	46,5	0,0	12. 1. 19,59	-5,5	-3,4	+10,3	19,24		1,72	12. 2. 10,28			T.
	B. (w.) XII. 82...	35,1	48,4	1,6	15,3	29,1	42,3	55,7	12. 5. 15,36				15,04			12. 6. 6,09			T.
	(a) B. (w.) XII. 128..	18,1	31,7	45,2	59,0	12,6	26,0	39,4	12. 7. 58,86				58,65			12. 8. 49,70			T.
	B. (w.) XII. 178..	11,4	24,8	38,2	51,9	5,6	18,8	32,1	12. 10. 51,83				51,56			12. 11. 42,61			T.
	H. C. 23179.....	58,0	11,7	25,0	38,7	52,3	5,7	19,0	12. 14. 38,63				38,40			12. 15. 29,46			T.
	B. (w.) XII. 291..	46,7	0,1	13,6	27,2	41,0	54,1	7,6	12. 17. 27,19				26,94			12. 18. 18,00			T.
	B. (w.) XII. 356..	53,8	7,4	20,7	34,2	48,0	1,2	14,7	12. 20. 34,29				33,94			12. 21. 25,01			T.
	β Corvi.....	6,7	21,3	35,7	50,4	5,3	19,7	34,1	12. 25. 50,46				50,39	51,15		12. 26. 41,46			T.
	η Bootis.....	8,9	23,2	37,2	51,6	6,2	20,2	34,2	13. 46. 51,64				51,12			13. 47. 42,29			T.
	ε Bootis.....	59,1	14,3	29,3	44,7	0,2	15,1	30,4	14. 37. 44,73				44,13	51,24		14. 38. 35,36			T.
	α <sup>2</sup> Libræ.....	13,6	27,7	41,3	55,4	9,5	23,5	37,3	14. 41. 55,47				55,36	51,19		14. 42. 46,60			T.
	(b) β Libræ.....	35,3	49,0	2,5	16,5	30,2	43,5	57,1	15. 8. 16,30				16,11			15. 9. 7,38			T.
May 2	⊙ 2 L.....	34,0	48,0	1,7	15,8	30,0	43,7	57,8	2. 38. 15,86				15,37		1,73	2. 39. 9,16			T.
	(c) Aldebaran.....	52,7	6,6	20,4	34,7	48,7	2,7	16,6	4. 26. 34,63				34,14	53,87					T.
	(d) β Tauri.....	....	34,7	49,8	5,3	21,0	36,1	51,2	5. 16. 5,37				4,76	54,03					T.
May 4	δ Leonis.....	37,1	51,6	5,8	20,4	35,0	49,2	3,7	11. 5. 20,40				19,87	57,88	1,76	11. 6. 17,78			T.
	δ Crateris.....	21,0	35,0	48,6	2,5	16,8	30,2	44,1	11. 11. 2,60				2,48			11. 12. 0,40			T.
	β Leonis.....	55,1	9,0	22,6	36,9	51,1	4,7	18,7	11. 40. 36,87				36,37	57,94		11. 41. 34,33			T.
	B. (w.) XI. 897...	36,3	50,0	3,2	17,0	30,6	44,0	57,3	11. 51. 16,92				16,65			11. 52. 14,62			T.
	B. (w.) XI. 951...	44,7	58,3	11,6	25,2	39,0	52,2	5,7	11. 54. 25,24				24,85			11. 55. 22,82			T.
	B.A.C. 4077.....	51,2	4,5	17,8	31,5	45,2	58,3	11,8	11. 57. 31,47				31,20			11. 58. 29,18			T.
	10 Virginis.....	....	45,7	59,2	12,6	26,3	39,6	....	12. 1. 12,68				12,32			12. 2. 10,30			T.
	(e) B. (w.) XII. 68..	22,3	35,7	49,2	2,8	16,5	29,7	43,2	12. 4. 2,77				2,39			12. 5. 0,38			T.
	(f) B. (w.) XII. 117..	42,2	55,8	9,2	23,0	36,7	50,0	3,3	12. 7. 22,88				22,66			12. 8. 20,65			T.
	B. (w.) XII. 181..	14,7	28,4	41,7	55,2	9,0	22,3	35,9	12. 10. 55,31				55,09			12. 11. 53,09			T.
	H. C. 23179.....	51,0	14,4	18,0	31,7	45,2	58,7	12,0	12. 14. 31,57				31,34			12. 15. 29,34			T.
	B. (w.) XII. 291..	39,7	53,1	6,5	20,2	33,7	47,1	0,6	12. 17. 20,12				19,87			12. 18. 17,87			T.
	B. (w.) XII. 356..	47,0	0,2	13,7	27,2	41,0	54,2	7,4	12. 20. 27,25				26,90			12. 21. 24,91			T.
	B.A.C. 4225.....	28,2	41,7	55,1	8,7	22,4	35,6	49,0	12. 23. 8,67				8,42			12. 24. 6,43			T.
	(g) β Corvi.....	59,8	14,3	28,8	43,7	58,4	12,7	27,3	12. 25. 43,57				43,50	58,02		12. 26. 41,51			T.
	(h) B. (w.) XII. 523..	51,4	5,0	18,5	32,0	46,0	59,1	12,8	12. 30. 32,11				31,90			12. 31. 29,92			T.
	Polaris SP.....	23,0	8,0	39,0	26,5	18,5	57,5	43,0	13. 3. 30,79				9,01			13. 5. 7,07			T.
	(i) Spica.....	49,3	3,2	16,5	30,4	44,3	57,8	11,4	13. 16. 30,41				30,24	58,16		13. 17. 28,32			T.
	ε Bootis.....	52,3	7,5	22,4	38,0	53,3	8,1	23,2	14. 37. 37,83				37,23	58,17		14. 38. 35,41			T.
	α <sup>2</sup> Libræ.....	6,5	20,6	34,2	48,5	2,7	16,3	30,3	14. 42. 48,45				48,34	58,24		14. 43. 46,52			T.
	β Libræ.....	28,7	42,1	55,7	9,4	23,3	36,6	50,2	15. 8. 9,43				9,24			15. 9. 7,45			T.
	α Coronæ.....	46,2	1,3	16,2	31,6	47,0	1,8	17,0	15. 27. 31,58				30,99	58,29		15. 28. 29,23			T.
	α Serpentis.....	24,7	38,1	51,7	5,3	19,1	32,4	46,0	15. 36. 5,33				4,92	58,12		15. 37. 3,17			T.
	β <sup>3</sup> Scorpii.....	14,1	28,4	42,6	57,0	11,4	25,4	39,7	15. 55. 56,94				56,84			15. 56. 55,11			T.
	(k) δ Ophiuchi.....	1,4	15,0	28,4	42,1	55,7	9,0	22,4	16. 5. 42,00				41,74	58,25		16. 6. 40,02			T.
	Polaris.....	36,0	....	55,0	45,5	37,5	10,0	53,5	1. 4. 45,44				8,50		1,72	1. 5. 7,46			T.
May 5	⊙ 1 L.....	47,4	1,2	15,1	29,7	43,8	57,7	11,7	2. 47. 29,52				29,03			2. 48. 28,11			T.
	⊙ 2 L.....	0,0	14,0	28,0	42,3	56,3	10,2	24,2	2. 49. 42,14				41,65			2. 50. 40,74			T.
	(l) α Orionis.....	32,2	45,7	59,2	13,1	26,7	40,0	53,6	5. 46. 12,93				12,51	59,28		5. 47. 11,80			T.
	(m) ε Hydræ.....	19,4	33,0	46,4	0,0	13,7	27,2	40,7	8. 38. 0,05				59,64	59,46		8. 38. 59,14			T.
	ε Leonis.....	46,7	1,6	16,2	31,1	46,2	0,7	15,4	9. 36. 31,13				30,59			9. 37. 30,16			T.
	Regulus.....	52,1	5,9	19,7	33,7	47,6	1,1	14,8	9. 59. 33,56				33,10	59,46		10. 0. 32,70			T.
	δ Leonis.....	35,2	49,7	4,0	18,6	33,2	47,5	2,0	11. 5. 18,60				18,06	59,68		11. 6. 17,74			T.
	δ Crateris.....	19,2	33,1	46,8	0,8	14,9	28,6	42,2	11. 11. 0,80				0,68			11. 12. 0,36			T.
	β Leonis.....	53,2	7,1	21,0	35,1	49,1	3,0	17,0	11. 40. 35,07				34,57	59,73		11. 41. 34,29			T.
	β Corvi.....	57,8	12,6	27,0	41,8	56,7	10,6	25,2	12. 25. 41,67				41,60	59,92		12. 26. 41,37			T.
	Polaris SP.....	21,0	9,5	40,0	31,5	13,0	....	....	13. 3. 29,70				7,92			13. 5. 7,74			T.
	α Coronæ.....	44,3	59,6	14,6	30,1	45,3	0,1	15,2	15. 27. 29,88				29,28	60,01		15. 28. 29,27			T.
May 7	(n) Regulus.....	48,7	2,6	16,1	30,1	44,1	57,6	11,4	9. 59. 30,08				29,76	62,77	1,68	10. 0. 32,61			T.
	δ Leonis.....	31,6	46,2	0,7	15,2	30,1	44,2	58,3	11. 5. 15,19				14,80	62,91		11. 6. 17,73			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>,349, -26<sup>s</sup>,905, -13<sup>s</sup>,633, +0<sup>s</sup>,010, +13<sup>s</sup>,656, +26<sup>s</sup>,895, +40<sup>s</sup>,327.

(a) 'One north-preceding.' (b) Cloudy. (c) Unsteady and extremely faint from cloud. (d) Disturbance at wire I. (e) Corrected by +10<sup>s</sup> for error in counting. (f) The counting being found 1<sup>s</sup> fast, the last four wires have been corrected accordingly. (g) Disturbance. (h) 'A bright star south-following.' (i) Diffused image. (k) Wires VI and VII have been diminished 20<sup>s</sup>. (l) Disturbance. The star clouded and very unsteady. (m) Corrected by -1<sup>s</sup> for error in counting. (n) Bright stars this night had no definition, and were too unsteady for accurate observation.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
May 7	δ Crateris .....	15,7	29,7	43,2	57,7	11,7	25,4	39,0	11. 10. 57,49	-5,5	-2,3	+12,3	57,52		1,68	11. 12. 0,45			T.
	β Leonis .....	50,0	3,9	17,5	31,7	45,7	59,6	13,4	11. 40. 31,68				31,33	62,95		11. 41. 34,30			T.
	β Corvi .....	54,6	9,2	23,7	38,6	53,1	7,4	21,8	12. 25. 38,35				38,44	63,06		12. 26. 41,46			T.
	(a) ε Bootis .....	47,2	2,2	17,4	32,9	48,2	3,2	18,2	14. 37. 32,75				32,29	63,12		14. 38. 35,47			T.
	α <sup>2</sup> Libræ .....	1,2	15,3	29,2	43,4	57,6	11,2	25,1	14. 41. 43,28				43,32	63,29		14. 42. 46,50			T.
	ξ <sup>1</sup> Libræ .....	41,5	55,1	8,7	22,7	36,5	50,0	3,7	14. 45. 22,60				22,60			14. 46. 25,78			T.
	ξ <sup>2</sup> Libræ .....	4,3	18,5	32,0	46,1	0,0	13,4	27,0	14. 47. 45,90				45,89			14. 48. 49,08			T.
	B. (w.) xiv. 972..	55,1	....	23,0	37,2	51,1	5,0	19,0	14. 50. 37,08				37,12			14. 51. 40,31			T.
	B. (w.) xiv. 1049.	14,1	28,2	41,7	56,0	9,7	23,2	37,2	14. 54. 55,73				55,75			14. 55. 58,95			T.
	(b) B. (w.) xiv. 1099	47,5	1,2	15,0	28,9	43,0	56,4	10,1	14. 57. 28,88				28,89			14. 58. 32,09			T.
	B. (w.) xiv. 1150.	....	26,8	40,3	54,6	8,5	22,1	36,0	14. 59. 54,46				54,48			15. 0. 57,68			T.
	B. (w.) xv. 61....	50,0	4,2	18,0	31,9	46,0	59,7	13,4	15. 3. 31,88				31,91			15. 4. 35,12			T.
	β Libræ .....	23,4	37,0	50,3	4,2	18,1	31,5	45,1	15. 8. 4,23				4,20			15. 9. 7,41			T.
	α Coronæ .....	41,2	56,2	11,2	26,6	42,0	57,0	12,1	15. 27. 26,60				26,14	63,17		15. 28. 29,37			T.
	B. (w.) xv. 631..	21,4	35,3	49,1	3,2	17,3	31,0	44,7	15. 32. 3,14				3,16			15. 33. 6,40			T.
	α Serpentis .....	19,4	33,0	46,3	0,0	13,8	27,1	40,6	15. 36. 0,02				59,76	63,31		15. 37. 3,00			T.
May 10	δ Leonis .....	26,6	41,0	55,2	9,7	24,6	38,7	53,1	11. 5. 9,85				9,46	68,22	1,83	11. 6. 17,67			T.
	δ Crateris .....	....	24,2	38,2	52,2	6,1	19,8	33,7	11. 10. 52,10				52,13			11. 12. 0,34			T.
	B. (w.) xii. 356..	36,6	50,0	3,2	16,8	30,6	43,8	57,2	12. 20. 16,89				16,69			12. 21. 24,99			T.
	B.A.C. 4225 .....	17,7	31,1	44,3	58,1	11,7	25,2	38,5	12. 22. 58,09				57,99			12. 24. 6,30			T.
	β Corvi .....	49,2	3,6	18,2	33,0	47,7	2,2	16,7	12. 25. 32,94				33,03	68,46		12. 26. 41,34			T.
	Spica .....	39,1	52,7	6,1	20,1	33,7	47,3	1,1	13. 16. 20,01				19,99	68,41		13. 17. 28,36			T.
	ε Bootis .....	42,0	57,1	12,1	27,6	43,0	57,7	13,1	14. 37. 27,52				27,06	68,37		14. 38. 35,54			T.
	α <sup>2</sup> Libræ .....	56,2	10,2	23,8	38,2	52,3	6,0	20,0	14. 41. 38,10				38,14	68,49		14. 42. 46,62			T.
	(c) β Libræ .....	18,1	31,7	45,4	59,1	....	....	....	15. 7. 59,04				59,01			15. 9. 7,53			T.
	(c) α Coronæ .....	36,0	....	6,0	21,3	36,7	51,6	6,7	15. 27. 21,34				20,88	68,46		15. 28. 29,42			T.
	Polaris .....	....	15,0	48,5	....	30,0	3,5	47,0	1. 4. 39,19				1,47		1,81	1. 5. 10,77			T.
May 11	(d) ⊙ 1 L .....	53,2	8,0	22,1	36,2	51,0	4,9	18,6	3. 10. 36,29				35,93			3. 11. 45,39			T.
	⊙ 2 L .....	7,6	21,7	35,4	50,1	4,5	18,2	32,3	3. 12. 49,97				49,61			3. 13. 59,07			T.
	α Hydræ .....	31,2	44,7	58,2	12,0	25,7	39,2	52,7	9. 19. 11,95				11,91	69,87		9. 20. 21,83			T.
	Regulus .....	41,6	55,3	8,8	22,8	36,8	50,6	4,2	9. 59. 22,87				22,55	69,93		10. 0. 32,53			T.
	β Leonis .....	42,3	56,6	10,3	24,6	38,7	52,4	6,3	11. 40. 24,46				24,11	70,14		11. 41. 34,21			T.
	H. C. 23100 .....	44,3	58,0	11,3	25,2	38,7	52,1	5,6	12. 11. 25,03				24,97			12. 12. 35,11			T.
	B. (w.) xii. 258..	4,7	18,2	31,2	45,7	59,3	12,3	25,9	12. 14. 45,40				45,33			12. 15. 55,48			T.
	B. (w.) xii. 295..	41,0	54,4	7,6	21,5	35,1	48,3	1,7	12. 17. 21,37				21,16			12. 18. 31,31			T.
	B. (w.) xii. 356..	34,7	48,1	1,2	15,1	28,6	41,9	55,3	12. 20. 14,99				14,79			12. 21. 24,94			T.
	B.A.C. 4225 .....	15,7	29,3	42,5	56,5	10,0	23,2	36,7	12. 22. 56,27				56,17			12. 24. 6,33			T.
	β Corvi .....	47,2	2,1	16,3	31,1	45,9	0,2	14,7	12. 25. 31,07				31,16	70,32		12. 26. 41,32			T.
	B. (w.) xii. 494..	56,0	9,3	23,0	36,7	50,5	3,7	17,3	12. 28. 56,64				36,59			12. 29. 46,75			T.
	(e) B. (w.) xii. 555..	34,1	47,8	1,0	14,7	28,5	42,2	55,6	12. 32. 14,84				14,81			12. 33. 24,98			T.
	B. (w.) xii. 599..	1,2	14,7	28,1	41,7	55,2	8,7	22,2	12. 34. 41,68				41,56			12. 35. 51,73			T.
	B. (w.) xii. 701..	32,8	46,3	59,9	13,7	27,6	41,0	54,4	12. 40. 13,67				13,64			12. 41. 23,82			T.
	B. (w.) xii. 761..	47,2	0,7	14,1	27,8	41,5	54,7	8,2	12. 43. 27,75				27,68			12. 44. 37,86			T.
	B. (w.) xii. 858..	28,4	41,7	55,1	8,7	22,7	35,9	49,4	12. 49. 8,80				8,74			12. 50. 18,93			T.
	46 Virginis .....	12,7	25,8	39,4	53,0	6,4	19,7	33,3	12. 51. 52,90				52,78			12. 53. 2,97			T.
	Polaris SP .....	15,0	59,0	32,0	21,0	12,0	48,5	32,0	13. 3. 22,79				2,09			13. 5. 12,30			T.
	B.A.C. 4828 .....	20,7	34,5	48,0	2,1	16,0	29,6	43,1	14. 28. 2,00				2,01			14. 29. 12,32			T.
	B. (w.) xiv. 584..	4,0	17,6	31,1	45,1	58,7	12,2	25,7	14. 30. 44,91				44,88			14. 31. 55,20			T.
	B. (w.) xiv. 641..	19,7	33,2	46,9	0,7	14,7	28,0	41,7	14. 34. 0,70				0,68			14. 35. 11,00			T.
	(f) ε Bootis .....	40,2	55,2	10,3	25,7	41,0	56,0	11,1	14. 37. 25,65				25,19	70,24		14. 38. 35,52			T.
	α <sup>2</sup> Libræ .....	54,3	8,5	22,1	36,4	50,6	4,1	18,0	14. 41. 36,29				36,33	70,31		14. 42. 46,66			T.
	α Coronæ .....	34,0	49,2	4,2	19,4	34,7	49,7	4,7	15. 27. 19,42				18,96	70,39		15. 28. 29,35			T.
	B. (w.) xv. 606..	18,4	22,2	35,7	50,0	4,1	17,5	31,3	15. 30. 49,88				49,90			15. 32. 0,29			T.
	α Serpentis .....	12,2	25,7	39,3	53,0	6,7	20,0	33,7	15. 35. 52,94				52,68	70,44		15. 37. 3,08			T.
	β <sup>1</sup> Scorpii .....	2,0	16,1	30,2	44,7	59,1	13,2	27,6	15. 55. 44,70				44,76			15. 56. 55,18			T.
	δ Ophiuchi .....	49,3	2,7	16,1	29,7	43,5	56,7	10,2	16. 5. 29,75				29,64	70,45		16. 6. 40,08			T.
	H. C. 29677 .....	9,3	23,5	37,2	51,7	6,0	19,7	33,7	16. 8. 51,58				51,64			16. 10. 2,08			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Bad definition. The sky had been previously clouded. (b) Wires VI and VII have been corrected by -10". (c) Cloudy. (d) No definition whatever and the observation consequently quite uncertain. The counting for I L was thought to be 1" fast, but no alteration has been made. (e) 'The north-preceding of two.' (f) The times at all the wires except I have been increased 10".



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Axis Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
May 12	(a) $\odot$ 2 L.....	....	15,0	....	....	....	11,8	25,7	3. 16. 43,32	-5,5	-2,3	+12,3	42,96		1,81	3. 17. 54,24			T.
May 13	$\beta$ Corvi.....	44,0	58,7	12,7	27,7	42,7	57,0	11,6	12. 25. 27,77				27,86	73,61	1,89	12. 26. 41,50			T.
	Spica.....	33,7	47,3	0,7	14,7	28,6	41,9	55,7	13. 16. 14,65				14,64	73,75		13. 17. 28,35			T.
	$\epsilon$ Bootis.....	36,7	51,7	6,7	22,2	37,6	52,4	7,6	14. 37. 22,13				21,67	73,76		14. 38. 35,48			T.
	(b) $\alpha^2$ Libræ.....	50,8	4,7	18,5	33,0	....	0,7	....	14. 41. 32,74				32,78	73,87		14. 42. 46,60			T.
May 14	$\delta$ Leonis.....	19,2	33,7	47,9	2,7	17,2	31,3	46,0	11. 5. 2,57			+10,0	2,09	75,54	1,90	11. 6. 17,59			T.
	$\beta$ Leonis.....	....	51,2	5,0	19,1	33,4	47,1	1,0	11. 40. 19,15				18,70	75,52		11. 41. 34,25			T.
	$\beta$ Corvi.....	42,0	56,7	10,8	25,8	40,6	55,0	9,5	12. 25. 25,77				25,70	75,76		12. 26. 41,31			T.
	B. (w.) XII. 920..	50,2	3,8	17,2	31,1	45,0	58,2	11,9	12. 52. 31,05				30,88			12. 53. 46,52			T.
	(c) B. (w.) XII. 976..	48,3	1,8	15,2	28,7	42,2	56,0	9,2	12. 55. 28,77				28,50			12. 56. 44,15			T.
	$\gamma$ Virginis.....	16,6	30,3	43,7	57,7	11,5	24,8	38,7	12. 58. 57,62				57,46			13. 0. 13,11			T.
	B.A.C. 4413.....	13,8	27,7	41,0	54,7	8,6	22,0	35,6	13. 1. 54,77				54,60			13. 3. 10,25			T.
	B. (w.) XIII. 76..	41,3	55,2	8,9	22,9	36,9	50,3	4,1	13. 4. 22,80				22,68			13. 5. 38,34			T.
	H. C. 24610.....	31,7	45,2	58,6	12,2	26,0	39,5	52,7	13. 7. 12,27				12,07			13. 8. 27,73			T.
	B. (w.) XIII. 176..	8,0	21,6	35,1	48,7	2,7	15,9	29,3	13. 9. 48,76				48,57			13. 11. 4,23			T.
	$\alpha$ Coronæ.....	....	42,7	58,7	14,2	29,7	44,5	59,4	15. 27. 14,14				13,61	75,76		15. 28. 29,45			T.
	$\alpha$ Serpentis.....	7,0	20,6	34,0	48,0	1,4	14,5	28,4	15. 35. 47,70				47,33	75,82		15. 37. 3,19			T.
	$\beta^1$ Scorpii.....	56,7	10,8	25,0	39,6	53,9	7,9	22,2	15. 55. 39,45				39,36			15. 56. 55,24			T.
	$\delta$ Ophiuchi.....	44,0	57,6	10,8	24,5	38,2	51,5	5,0	16. 5. 24,51				24,27	75,86		16. 6. 40,17			T.
	H. C. 26977.....	4,1	18,2	32,0	46,4	0,6	14,5	28,3	16. 8. 46,30				46,21			16. 10. 2,11			T.
May 16	(d) $\odot$ 1 L.....	24,7	39,2	53,3	7,8	22,5	36,3	50,7	3. 30. 7,79			-3,5	7,25		1,68	3. 31. 25,79			T.
	$\odot$ 2 L.....	39,2	53,6	7,7	22,2	36,6	....	....	3. 32. 22,13				21,59			3. 33. 40,13			T.
	(e) Aldebaran.....	28,1	41,9	55,7	10,1	24,2	38,1	52,1	4. 26. 10,02				9,51	78,54		4. 27. 28,11			T.
	Pollux.....	13,7	29,2	44,6	59,8	15,3	30,3	45,7	7. 34. 59,80				59,18	78,84		7. 36. 18,00			T.
	$\beta$ Leonis.....	33,7	47,7	1,5	15,6	29,7	43,5	57,3	11. 40. 15,57				15,06	79,14		11. 41. 34,17			T.
	$\beta$ Corvi.....	38,7	53,3	7,7	22,4	37,1	51,5	6,0	12. 25. 22,38				22,29	79,15		12. 26. 41,45			T.
	Polaris SP.....	11,0	53,0	28,5	14,5	4,0	41,5	....	13. 3. 16,76				54,70			13. 5. 13,91			T.
	Spica.....	28,3	41,7	55,5	9,3	23,3	36,7	50,3	13. 16. 9,30				9,11	79,27		13. 17. 28,33			T.
	B.A.C. 4593.....	46,2	59,9	13,3	27,0	40,7	54,1	7,7	13. 38. 26,99				26,76			13. 39. 46,01			T.
	(f) B. (w.) XIII. 730..	20,7	34,4	47,8	1,5	15,3	28,7	42,3	13. 41. 1,53				1,30			13. 42. 20,55			T.
	(g) B. (w.) XIII. 773..	33,6	47,2	0,7	14,3	27,9	....	....	13. 44. 14,30				14,07			13. 45. 33,32			T.
	$\eta$ Bootis.....	40,8	55,2	9,2	23,7	38,2	52,1	6,3	13. 46. 23,64				23,10			13. 47. 42,36			T.
	(h) Arcturus.....	....	....	....	40,2	54,6	8,6	22,8	14. 7. 40,04				39,50	79,23		14. 8. 58,78			T.
	(i) Polaris.....	22,5	5,5	42,0	31,0	22,0	54,5	37,5	1. 4. 30,71				54,02		1,60	1. 5. 14,05			T.
May 17	$\odot$ 1 L.....	20,9	35,2	49,3	3,7	18,2	32,2	46,3	3. 34. 3,68				3,15			3. 35. 23,35			T.
	$\odot$ 2 L.....	35,4	49,7	3,7	18,3	32,7	46,7	1,0	3. 36. 18,22				17,69			3. 37. 37,89			T.
	(k) Aldebaran.....	....	....	....	8,5	22,7	36,3	50,3	4. 26. 8,39				7,88	80,17		4. 27. 28,14			T.
	$\alpha$ Orionis.....	11,0	24,4	38,0	51,7	5,6	19,0	32,7	5. 45. 51,77				51,33	80,41		5. 47. 11,68			T.
	(l) Castor.....	....	....	36,1	52,1	8,1	23,9	39,7	7. 23. 52,08				51,40	80,54		7. 25. 11,95			B.
	(m) Procyon.....	35,0	48,4	1,8	15,4	29,2	42,4	56,1	7. 30. 15,47				15,06	80,58		7. 31. 35,61			B.
	Pollux.....	12,2	27,5	42,6	58,1	13,6	28,7	44,0	7. 34. 58,10				57,48	80,53		7. 36. 18,04			B.
	$\delta$ Leonis.....	14,0	28,6	42,7	57,3	12,0	26,1	40,7	11. 4. 57,35				56,80	80,80		11. 6. 17,59			B.
	(n) $\delta$ Crateris.....	....	....	25,7	39,7	53,6	7,4	21,3	11. 10. 39,68				39,53			11. 12. 0,24			T.
	(o) $\beta$ Leonis.....	32,1	46,2	59,7	14,0	28,1	42,0	55,6	11. 40. 13,96				13,45	80,74		11. 41. 34,19			T.
	$\beta$ Corvi.....	37,2	51,7	6,0	20,7	35,6	49,9	4,3	12. 25. 20,77				20,68	80,76		12. 26. 41,47			T.
	$\gamma$ Virginis.....	13,0	26,5	39,7	53,5	7,0	20,2	33,6	12. 32. 53,26				53,04			12. 34. 13,84			T.
	38 Virginis.....	39,8	53,3	6,6	20,2	34,0	47,2	0,6	12. 44. 20,24				19,95			12. 45. 40,76			T.
	$\delta$ Virginis.....	12,1	25,6	39,1	52,7	6,3	19,6	33,1	12. 46. 52,84				52,44			12. 48. 13,25			T.
	$\gamma$ Virginis.....	11,7	25,2	38,5	52,4	6,4	19,8	33,4	12. 58. 52,48				52,29			13. 0. 13,12			T.
	53 Virginis.....	13,2	27,1	40,7	55,0	9,2	22,9	36,8	13. 2. 54,99				54,86			13. 4. 15,69			T.
	61 Virginis.....	41,6	55,6	9,5	23,8	38,1	52,0	6,0	13. 9. 23,80				23,68			13. 10. 44,52			T.
	Spica.....	26,7	40,3	53,8	7,7	21,7	35,2	48,7	13. 16. 7,73				7,54	80,84		13. 17. 28,39			T.
	$\iota^2$ Virginis.....	19,7	33,0	46,6	0,2	13,9	27,1	40,7	13. 23. 0,17				59,92			13. 24. 20,78			T.
	(a) 49 Herculis.....	22,2	36,4	50,2	4,2	18,5	....	....	16. 44. 4,23				3,73			16. 45. 24,81			T.
	(a) 54 Herculis.....	52,8	7,2	21,2	35,5	49,9	3,9	....	16. 47. 35,51				34,98			16. 48. 56,06			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) Cloudy. (b) Doubtful observation on account of clouds. (c) 'Difficult to observe.' A brighter of greater N.P.D. was noticed. (d) Clouds passing. (e) After this observation a large class of students came into the observing rooms. (f) Faint. (g) 'Not good.' Extremely faint at last from cloud. (h) Hid at first by cloud. The times have been increased  $20^s$ . (i) This and following transits of stars to May 20 were used for the determination of the Longitude of the Observatory by Galvanic signals. (j) Disturbance at the first three wires. (k) Disturbance at the first three wires. (l) Disturbance by a carriage passing. (m) Flickering. (n) Extremely faint: not seen earlier. (o) Disturbance at the last wire.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		1	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
May 17	(a) B.A.C. 5749.....	23,1	....	....	....	18,8	32,4	46,2	16.55.4,66	-5,5	-3,5	+10,0	4,17		1,60	16.56.25,26		T.	
	(a) α Ophiuchi.....	6,2	....	....	....	1,2	....	28,7	17.26.47,37				46,89	81,17		17.28.8,01		T.	
May 18	(b) ☉ 1 L.....	17,2	31,7	46,0	0,0	14,5	29,0	....	3.38.0,22				59,68		1,57	3.39.21,56		B.	
	(c) ☉ 2 L.....	....	47,0	1,2	15,8	30,2	44,6	58,7	3.40.15,76				15,22			3.41.37,10		B.	
	(d) Aldebaran.....	24,6	38,4	52,2	6,8	21,0	34,6	48,7	4.26.6,62				6,11	81,95		4.27.28,04		B.	
	(e) α Orionis.....	....	23,1	36,4	50,1	3,9	17,3	30,7	5.45.50,14				49,70	82,04		5.47.11,72		B.	
	(b) Sirius.....	35,2	49,2	3,2	17,4	31,3	45,4	59,3	6.37.17,29				17,17	82,08		6.38.39,25		B.	
	(b) Castor.....	2,7	18,7	34,3	50,3	6,8	22,2	38,0	7.23.50,42				49,74	82,19		7.25.11,87		B.	
	Procyon.....	33,5	47,0	0,1	13,8	27,6	40,9	54,3	7.30.13,89				13,48	82,15		7.31.35,61		B.	
	Pollux.....	10,4	26,0	41,1	56,5	12,0	27,0	42,4	7.34.56,49				55,87	82,13		7.36.18,01		B.	
	(f) ε Hydræ.....	....	....	23,4	37,0	51,0	4,2	17,8	8.37.37,13				36,70	82,24		8.38.58,91		B.	
	α Hydræ.....	18,8	32,5	46,0	59,7	13,4	26,9	40,6	9.18.59,70				59,48	82,22		9.20.21,73		B.	
	Regulus.....	29,3	43,1	56,8	10,8	24,7	38,2	52,0	9.59.10,70				10,22	82,18		10.0.32,51		B.	
	(g) β Leonis.....	30,5	44,6	58,3	12,2	26,4	40,2	54,1	11.40.12,33				11,82	82,36		11.41.34,17		D.	
	γ Virginis.....	11,2	24,7	37,8	51,6	5,3	18,5	31,7	12.32.51,54				51,22			12.34.13,62		D.	
	38 Virginis.....	37,9	51,6	4,8	18,4	32,3	45,5	58,7	12.44.18,46				18,17			12.45.40,59		D.	
	δ Virginis.....	....	23,9	37,3	50,9	4,7	17,8	31,3	12.46.50,91				50,51			12.48.12,93		D.	
	g Virginis.....	9,8	23,6	36,8	50,8	4,6	17,9	31,7	12.58.50,74				50,55			13.0.12,98		D.	
	53 Virginis.....	11,5	25,3	39,1	53,3	7,4	21,1	35,0	13.2.53,24				53,11			13.4.15,54		D.	
	61 Virginis.....	39,6	53,8	7,8	22,1	36,6	50,3	4,3	13.9.22,07				21,95			13.10.44,39		D.	
	Spica.....	25,2	38,8	52,2	6,2	19,9	33,5	47,3	13.16.6,16				5,97	82,41		13.17.28,42		D.	
	l <sup>a</sup> Virginis.....	17,8	31,5	44,6	58,5	12,2	25,6	39,2	13.22.58,49				58,24			13.24.20,70		D.	
	B.A.C. 5749.....	21,5	35,3	48,8	3,1	17,2	30,8	44,7	16.55.3,06				2,57			16.56.25,26		D.	
	η Ophiuchi.....	54,1	8,1	21,7	35,9	50,2	3,8	17,8	17.0.35,94				35,82			17.1.58,51		D.	
	λ Herculis.....	42,2	57,2	11,8	27,1	42,3	57,2	12,1	17.23.27,13				26,54			17.24.49,26		D.	
	α Ophiuchi.....	4,4	18,2	31,8	45,8	59,8	13,4	27,2	17.26.45,80				45,32	82,76		17.28.8,04		D.	
May 19	(a) ☉ 1 L.....	....	....	....	57,2	12,0	26,0	40,3	3.41.57,33			+9,9	56,79		1,55	3.43.20,24		B.	
	(a) ☉ 2 L.....	....	....	....	12,6	27,3	41,4	55,5	3.44.12,65				12,11			3.45.35,56		B.	
	(h) Sirius.....	33,6	47,8	1,5	15,8	30,2	43,8	58,0	6.37.15,82				15,69	83,56		6.38.39,33		B.	
	(i) Regulus.....	....	....	....	9,1	23,0	36,7	50,2	9.59.9,02				8,53	83,85		10.0.32,39		B.	
	δ Leonis.....	10,9	25,2	39,5	54,1	8,9	23,0	37,2	11.4.54,11				53,56	84,01		11.6.17,49		B.	
	Spica.....	23,7	37,3	50,8	4,6	18,5	31,8	45,6	13.16.4,61				4,41	83,97		13.17.28,39		D.	
	(a) η Bootis.....	36,2	50,5	4,6	....	....	....	....	13.46.18,97				18,43			13.47.42,45		T.	
	Arcturus.....	52,3	6,7	20,8	35,3	49,7	3,8	18,2	14.7.35,26				34,72	84,01		14.8.58,75		D.	
	ε Bootis.....	26,5	41,5	56,7	12,0	27,4	42,3	57,6	14.37.12,00				11,38	84,07		14.38.35,46		T.	
	α <sup>a</sup> Libræ.....	40,7	54,8	8,7	22,7	36,9	50,7	4,6	14.41.22,73				22,59	84,09		14.42.46,67		T.	
	δ Ophiuchi.....	35,8	49,3	2,7	16,4	29,9	43,3	56,6	16.5.16,29				16,00	84,19		16.6.40,16		D.	
	Antares.....	16,6	31,6	46,2	1,7	16,8	31,5	46,6	16.19.1,57				1,49	84,16		16.20.25,68		T.	
May 20	(k) ☉ 2 L.....	28,2	42,7	57,0	11,7	26,2	40,2	54,7	3.48.11,53				10,99		1,56	3.49.35,94		T.	
	(l) β Corvi.....	....	....	....	....	30,7	45,1	59,7	12.25.15,97				15,87	85,55		12.26.41,38		T.	
	Polaris SP.....	3,5	49,0	23,5	....	2,5	39,0	....	13.3.12,99				50,77			13.17.28,35		T.	
	Spica.....	21,7	35,7	49,2	3,0	16,8	30,5	44,0	13.16.2,98				2,79	85,58		14.42.46,66		T.	
	α <sup>a</sup> Libræ.....	39,2	53,2	7,1	21,2	35,3	49,0	3,0	14.41.21,14				21,00	85,69		16.20.25,76		T.	
	Antares.....	15,0	30,0	45,0	0,2	15,3	30,1	45,0	16.19.0,08				0,00	85,66				T.	
May 21	(a) ☉ 1 L.....	10,7	25,0	....	....	....	22,7	37,0	3.49.53,86				53,31		1,53	3.51.19,81		T.	
	(a) ☉ 2 L.....	25,7	40,2	54,3	9,1	23,6	37,7	52,0	3.52.8,95				8,40			3.53.34,90		T.	
	(m) α Orionis.....	....	....	31,7	45,7	59,7	12,7	26,3	5.45.45,66				45,22	86,51		5.47.11,84		T.	
	(b) Sirius.....	30,7	44,7	58,7	12,7	27,0	40,7	54,7	6.37.12,74				12,61	86,62		6.38.39,29		T.	
	(n) β Corvi.....	30,6	45,2	59,7	14,6	29,2	43,5	58,0	12.25.14,40				14,30	87,11		12.26.41,34		T.	
	(o) Polaris SP.....	5,0	42,5	18,0	14,0	57,0	33,5	17,5	13.3.9,64				47,42			13.17.28,30		T.	
	(o) Spica.....	20,3	34,2	47,6	1,5	15,2	28,7	42,3	13.16.1,40				1,20	87,17		14.42.46,65		T.	
	(a)(m) α <sup>a</sup> Libræ.....	37,7	51,7	5,3	19,7	33,8	47,7	1,3	14.41.19,60				19,46	87,23				T.	
May 23	(p)(q) ☉ 2 L.....	13,9	38,2	52,8	7,4	22,0	36,3	50,9	4.0.7,36			-4,1	6,76		1,48	4.1.36,50		B.	
	(p) Spica.....	17,3	30,9	44,3	58,3	12,2	25,6	39,3	13.15.58,27				58,05	90,32				B.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) Cloudy. (b) Great motion. (c) The transit of 2 L. is discordant: the same observer took the Circle observation. (d) Faint and flickering.  
 (e) Disappearing at times and unsteady. (f) Extremely faint: not seen earlier. (g) The observations marked D were taken by Mr Dunkin, assistant observer at Greenwich. (h) The sky hazy and star faint. (i) Very faint from thick haze. (k) Fringed and unsteady. (l) The observer was detained at the Northumberland Dome. (m) Very faint. (n) The noted times have been decreased 1<sup>s</sup>. (o) 'Good.' (p) Very bad definition. (q) The shutters could not be opened.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
May 23	(a) $\alpha$ Herculis.....	46,4	0,3	14,2	28,4	42,4	56,2	9,8	17. 6. 28,25	-5,5	-4,1	+9,9	27,71	90,54	1,48	.	.	.	B.
May 24	(b) $\odot$ 1 L.....	8,2	22,5	36,5	51,4	6,1	20,4	34,7	4. 1. 51,40				50,81		1,51	4. 3. 22,02			B.
	$\odot$ 2 L.....	24,3	38,6	52,8	7,7	22,2	36,6	51,0	4. 4. 7,60				7,01			4. 5. 38,22			B.
	$\alpha$ Orionis.....	0,2	13,5	27,1	40,9	54,7	7,9	21,3	5. 45. 40,80				40,33	91,41		5. 47. 11,64			B.
	Spica.....	15,6	29,3	43,1	56,8	10,5	24,0	37,7	13. 15. 56,72				56,50	91,86		13. 17. 28,29			B.
	$\epsilon$ Bootis.....	18,9	34,0	49,1	4,3	19,6	34,7	49,8	14. 37. 4,34				3,68	91,77		14. 38. 35,55			B.
	(c) $\alpha^s$ Libræ.....	33,1	47,2	0,7	15,3	29,2	43,2	56,8	14. 41. 15,07				14,91	91,79		14. 42. 46,79			B.
May 25	$\odot$ 1 L.....	8,7	23,1	37,6	52,3	6,8	21,1	35,4	4. 5. 52,14				51,55		1,42	4. 7. 24,33			B.
	$\odot$ 2 L.....	24,6	39,3	53,6	8,3	22,9	37,3	51,6	4. 8. 8,23				7,64			4. 9. 40,43			B.
	(d) Spica.....	14,2	28,1	41,4	55,2	9,3	22,7	36,2	13. 15. 55,30				55,08	93,27		13. 17. 28,41			B.
	(e) $\alpha$ Coronæ.....	11,3	26,3	41,3	56,7	12,2	27,1	42,1	15. 26. 56,72				56,06	93,38		15. 28. 29,52			B.
	$\alpha$ Serpentis.....	49,7	3,2	16,3	30,2	43,9	57,2	10,5	15. 35. 30,14				29,68	93,56		15. 37. 3,15			B.
	$\delta$ Ophiuchi.....	26,7	39,9	53,4	7,1	20,8	33,9	47,4	16. 5. 7,03				6,72	93,54		16. 6. 40,21			B.
May 26	(f) $\odot$ 1 L.....	9,5	24,2	38,1	53,0	7,7	22,0	36,4	4. 9. 52,98				52,39		1,30	4. 11. 26,54			B.
	$\odot$ 2 L.....	25,8	40,3	54,2	9,4	24,0	38,0	52,4	4. 12. 9,16				8,57			4. 13. 42,72			B.
	Spica.....	12,8	26,6	40,0	54,1	7,8	21,3	35,0	13. 15. 53,94				53,72	94,63					B.
	(g) Arcturus.....	41,8	56,1	10,1	24,7	39,2	53,3	7,7	14. 7. 24,70				24,03	94,69					B.
May 27	(h) $\odot$ 1 L.....	11,3	25,7	40,1	54,9	9,6	23,9	38,1	4. 13. 54,80				54,21			4. 15. 29,66			B.
	$\odot$ 2 L.....	27,1	42,0	56,4	11,2	25,7	40,0	55,2	4. 16. 11,08				10,49			4. 17. 45,94			B.
June 3	Arcturus.....	30,1	44,3	58,6	13,3	27,5	41,6	56,2	14. 7. 13,08				12,34	106,35	1,51				B.
June 4	Arcturus.....	28,6	43,1	57,0	11,6	26,1	40,2	54,4	14. 7. 11,57				10,83	107,86	1,54				B.
June 8	$\odot$ 1 L.....	2,7	17,1	31,6	46,7	1,6	16,0	30,9	5. 2. 46,66				45,96		1,47	5. 4. 39,81			B.
	$\odot$ 2 L.....	20,1	35,0	49,2	4,3	19,1	33,2	48,1	5. 5. 4,14				3,44			5. 6. 57,29			B.
	(i) Polaris SP.....	....	....	9,4	56,5	47,0	22,0	5,5	13. 2. 58,17				34,34						B.
	Spica.....	53,1	7,0	20,3	34,4	48,2	1,7	15,3	13. 15. 34,29				33,93	114,35					B.
June 10	Arcturus.....	19,2	33,6	47,6	2,2	16,8	30,9	45,1	14. 7. 2,20				1,51	117,15	1,55				B.
June 11	$\odot$ 1 L.....	....	37,6	52,2	7,0	22,0	36,3	51,1	5. 15. 7,04				6,34		1,56	5. 17. 4,59			B.
	$\odot$ 2 L.....	40,7	55,2	10,0	24,9	39,7	53,9	8,6	5. 17. 24,71				24,01			5. 19. 22,27			B.
	(k) Sirius.....	59,1	13,1	26,8	41,3	55,3	9,3	23,2	6. 36. 41,15				40,84	118,34					B.
June 13	(g) $\epsilon$ Bootis.....	49,1	4,3	19,3	....	....	5,2	20,2	14. 36. 34,71				33,89	121,49	1,50	14. 38. 35,48			B.
	(g) $\alpha^s$ Libræ.....	3,6	....	31,3	....	59,6	....	27,2	14. 40. 45,42				45,08	121,63		14. 42. 46,67			B.
	$\alpha$ Ophiuchi.....	25,7	39,6	53,6	7,4	21,3	35,0	48,7	17. 26. 7,33				6,64	121,82		17. 28. 8,40			B.
June 14	(l) $\odot$ 1 L.....	45,4	0,3	14,6	29,6	44,6	58,9	....	5. 27. 29,57				28,81		1,50	5. 29. 31,41			B.
	(m) $\beta$ Leonis.....	....	....	17,4	31,9	46,0	59,6	13,6	11. 39. 31,75				31,03	122,88		11. 41. 34,02			B.
	Arcturus.....	13,4	27,6	41,7	56,4	10,7	25,2	39,3	14. 6. 56,33				55,59	123,03		14. 8. 58,73			B.
	$\epsilon$ Bootis.....	....	2,5	17,6	33,1	48,6	3,5	18,6	14. 36. 33,05				32,23	123,14		14. 38. 35,41			B.
	$\alpha^s$ Libræ.....	2,0	15,9	29,6	43,8	58,0	11,6	25,6	14. 40. 43,78				43,44	123,27		14. 42. 46,62			B.
June 15	(l)(m) $\odot$ 1 L.....	53,1	7,9	22,2	....	52,0	6,7	21,0	5. 31. 37,15				36,39		1,49	5. 33. 40,42			B.
	(m) $\beta$ Leonis.....	....	....	....	....	44,4	58,0	12,1	11. 39. 30,21				29,49	124,40		11. 41. 33,90			B.
	(m) Polaris SP.....	....	28,3	....	49,0	40,5	16,0	58,5	13. 2. 51,37				29,18						B.
	Spica.....	42,9	56,8	10,3	24,1	38,0	51,4	5,0	13. 15. 24,07				23,67	124,56		13. 17. 28,18			B.
June 16	(m) Arcturus.....	....	....	40,2	54,9	9,3	23,5	37,8	14. 6. 54,83				54,09	124,52		14. 8. 58,65			B.
	(n) $\odot$ 1 L.....	....	....	....	45,2	0,0	14,2	....	5. 35. 45,03				44,27		1,43	5. 37. 49,85			B.
	$\odot$ 2 L.....	19,0	....	....	3,0	....	....	47,0	5. 38. 3,00				2,23			5. 40. 7,81			B.
	(o) $\epsilon$ Bootis.....	44,6	59,9	14,8	30,1	45,3	0,6	15,9	14. 36. 30,17				29,35	126,01		14. 38. 35,46			B.
	H. C. 29452.....	2,0	16,1	29,8	44,3	58,4	12,3	26,6	16. 0. 44,21				43,89			16. 2. 50,09			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40",349, -26",905, -13",633, +0",010, +13",656, +26",895, +40",327.

(a) Very bad definition: the two stars scarcely distinguished. (b) Great waving. (c) Very faint. (d) A dense sky throughout the day. (e) Wire VI was set down confusedly 26,1. (f) The sky dense till the passage of Spica. (g) Cloudy. (h) Bad definition. No clock-stars could be taken. (i) Steady. (k) The night was cloudy. (l) The other Limb hid by cloud. (m) Cloud. (n) Without the dark glass. (o) Very faint from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
June 16	A. (α.) 15398 ....	12,3	26,3	40,4	54,8	9,1	23,1	37,1	16. 2. 54,73	-5,5	-5,4	+7,6	54,41		1,43	16. 5. 0,61		B.	
	H. C. 29778.....	41,3	55,4	9,2	23,6	38,0	51,6	5,7	16. 12. 23,54				23,22			16. 14. 29,43		B.	
	Antares.....	34,9	49,8	4,3	19,7	35,3	49,7	4,6	16. 18. 19,76				19,48	126,46		16. 20. 25,69		B.	
	(a) H. C. 30046.....	....	12,7	27,4	....	56,7	....	25,2	16. 21. 41,91				41,60			16. 23. 47,82		B.	
	(b) B. (w.) xvii. 48..	24,6	38,1	51,0	5,9	19,6	33,2	47,1	17. 2. 5,64				5,26			17. 4. 11,52		B.	
	α Herculis.....	11,2	25,1	39,0	53,1	17,1	20,6	34,6	17. 5. 52,96				52,25	126,26		17. 7. 58,51		B.	
	β Lyræ.....	47,3	3,6	19,3	35,7	52,0	7,7	23,9	18. 42. 35,64				34,74	126,24		18. 44. 41,10		B.	
June 17	⊙ 1 L.....	9,0	23,9	38,2	53,0	8,2	22,6	37,4	5. 39. 53,18				52,42		1,32	5. 41. 59,38		B.	
	⊙ 2 L.....	27,0	41,6	56,3	11,1	26,2	40,6	55,3	5. 42. 11,15				10,39			5. 44. 17,36		B.	
	Procyon.....	48,6	2,2	15,3	29,2	42,7	56,1	9,6	7. 29. 29,10				28,49	127,04		7. 31. 35,55		B.	
	Arcturus.....	9,1	23,3	37,4	52,0	6,4	20,6	35,0	14. 6. 51,97				51,22	127,38		14. 8. 58,65		B.	
	α <sup>2</sup> Libræ.....	57,7	11,6	25,4	39,6	53,6	7,5	21,3	14. 40. 39,53				39,19	127,51		14. 42. 46,65		B.	
	Antares.....	33,6	48,6	3,5	18,7	33,8	48,5	3,6	16. 18. 18,62				18,34	127,60		16. 20. 25,89		B.	
	α Herculis.....	9,9	23,8	37,6	51,6	5,8	19,6	33,2	17. 5. 51,64				50,93	127,59		17. 7. 58,52		B.	
June 19	Rigel.....	36,1	49,9	3,2	17,2	30,7	44,1	57,9	5. 5. 17,02				16,69	130,91	1,20	5. 7. 27,58		B.	
	(c) α Orionis.....	21,0	34,6	47,9	1,6	15,3	23,6	42,2	5. 45. 1,60				1,03	130,89		5. 47. 11,95		B.	
June 20	(d) ⊙ 1 L.....	33,0	47,7	2,4	17,0	32,2	46,4	1,3	5. 52. 17,15				16,46			5. 54. 27,39		B.	
	⊙ 2 L.....	51,3	5,6	20,0	35,0	50,0	4,4	19,2	5. 54. 35,07				34,38			5. 56. 45,31		B.	
	(e) Arcturus.....	4,9	....	33,6	48,0	2,4	16,3	30,9	14. 6. 47,91				47,23	131,35		14. 8. 58,57		B.	
June 21	α Ophiuchi.....	15,1	29,0	42,6	56,4	10,7	24,2	37,7	17. 27. 56,53				55,92	12,61	1,23	17. 28. 8,55		B.	
	μ <sup>1</sup> Sagittarii.....	4,8	19,1	33,3	48,1	2,5	16,8	31,3	18. 4. 47,99				47,77	12,65		18. 5. 0,43		B.	
	β Lyræ.....	41,1	57,1	12,9	29,2	45,4	1,3	17,3	18. 44. 29,19				28,35	12,70		18. 44. 41,04		B.	
June 23	(f) Polaris SP.....	....	....	....	45,0	35,5	9,5	53,5	13. 4. 46,25				25,59		1,40			B.	
	Spica.....	32,3	46,0	59,7	13,3	27,2	40,8	54,2	13. 17. 13,36				13,05	15,11				B.	
	α Serpentis.....	8,1	21,6	35,0	48,6	2,4	15,8	29,3	15. 36. 48,69				48,14	15,17				B.	
June 24	(g) ⊙ 1 L.....	5,9	20,4	34,9	49,9	4,9	19,3	33,9	6. 10. 49,89				49,20		1,44	6. 11. 5,29		B.	
	⊙ 2 L.....	23,4	38,0	52,6	7,7	22,3	37,0	51,8	6. 13. 7,55				6,86			6. 13. 22,95		B.	
	(h) Arcturus.....	59,8	14,2	28,1	42,6	57,2	11,3	25,4	14. 8. 42,65				41,97	16,57				B.	
June 28	(h)(i) α Orionis.....	8,9	22,3	35,9	49,3	....	....	....	5. 46. 49,49	-5,8	+10,7		48,98	23,07	1,28	5. 47. 11,90		B.	
June 29	(h)(k) ⊙ 1 L.....	....	58,8	13,3	....	....	57,8	12,1	6. 31. 28,22				27,55			6. 31. 50,51		B.	
	⊙ 2 L.....	1,9	16,2	31,0	45,8	0,8	15,0	29,8	6. 33. 45,79				45,12			6. 34. 8,08		B.	
	(i)(l) Sirius.....	34,3	....	....	16,8	31,0	44,7	58,9	6. 38. 16,68				16,54	22,74		6. 38. 39,50		B.	
	(i) Procyon.....	32,3	45,9	....	....	....	40,0	53,6	7. 31. 12,96				12,48	23,10		7. 31. 35,49		B.	
	Arcturus.....	....	....	21,5	35,9	50,2	4,3	18,6	14. 8. 35,79				35,14	23,36		14. 8. 58,51		B.	
	(i) ε Bootis.....	....	....	....	12,7	28,0	43,0	58,0	14. 38. 12,58				11,83	23,42		14. 38. 35,22		B.	
	ζ <sup>4</sup> Libræ.....	33,6	47,6	1,3	15,6	29,9	43,8	57,8	15. 24. 15,66				15,52			15. 24. 38,95		B.	
	α Coronæ.....	21,3	36,3	51,3	6,8	22,1	36,8	52,0	15. 28. 6,66				5,92	23,46		15. 28. 29,36		B.	
	α Serpentis.....	59,7	13,3	26,6	40,4	54,3	7,6	21,0	15. 36. 40,41				39,91	23,38		15. 37. 3,35		B.	
	β Scorpii.....	2,3	17,3	32,1	47,2	2,0	16,8	31,8	15. 41. 47,07				47,00			15. 42. 10,45		B.	
	θ Libræ.....	24,0	38,0	51,7	6,0	20,2	34,1	48,1	15. 45. 6,02				5,88			15. 45. 29,33		B.	
	(m) δ Scorpii.....	33,5	48,3	2,4	17,2	32,0	46,2	0,9	15. 51. 17,22				17,13			15. 51. 40,59		B.	
June 30	H. C. 30474.....	57,2	11,4	25,2	39,6	54,0	7,8	21,9	16. 37. 39,59				39,46		1,33	16. 38. 4,23		B.	
	(n) H. C. 30547.....	....	47,9	2,1	16,3	31,0	44,8	....	16. 40. 16,42				16,30			16. 40. 41,08		B.	
	H. C. 30678.....	12,1	26,8	41,5	56,8	12,1	26,6	41,2	16. 44. 56,73				56,67			16. 45. 21,45		B.	
	H. C. 30813.....	51,6	6,2	21,0	35,6	50,6	5,1	19,6	16. 49. 35,67				35,59			16. 50. 0,37		B.	
	B.A.C. 5730.....	26,3	41,1	55,8	10,6	25,6	40,2	55,0	16. 54. 10,65				10,57			16. 54. 35,36		B.	
	H. C. 31140.....	28,1	42,2	56,2	10,3	25,0	38,8	53,1	17. 0. 10,52				10,39			17. 0. 35,18		B.	
	α Herculis.....	52,6	6,4	20,3	34,2	48,3	2,2	16,0	17. 7. 34,29				33,69	24,88		17. 7. 58,49		B.	
	H. C. 31556.....	13,2	27,7	42,2	56,9	11,7	26,2	40,8	17. 13. 56,96				56,87			17. 14. 21,68		B.	
	H. C. 31733.....	24,5	39,0	53,1	7,7	22,3	36,2	50,9	17. 19. 7,67				7,57			17. 19. 32,38		B.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>,349, -26<sup>s</sup>,905, -13<sup>s</sup>,633, +0<sup>s</sup>,010, +13<sup>s</sup>,656, +26<sup>s</sup>,895, +40<sup>s</sup>,327.

June 20, 17<sup>h</sup>, Hardy was put forward 2<sup>m</sup>. The hand moved stiffly.

(a) Very faint from cloud. (b) Obscured by mist. (c) Unsteady. (d) Great motion and no definition. (e) Badly defined: the shutter was in the way. (f) Steady. (g) Cloudy day: storm and lightning. (h) The wind was boisterous. (i) Cloudy. (k) Partly without the dark glass: clouds passing. (l) The beat of the clock indistinct. (m) Blazing. (n) 'A brighter preceded.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
June 30	H. C. 31911.....	34,6	49,1	3,2	17,7	32,3	46,3	1,2	17.24.17,77	-5,5	-5,8	+10,7	17,67		1,33	17.24.42,49			B.
	$\alpha$ Ophiuchi.....	3,1	16,8	30,3	44,4	58,3	12,0	25,7	17.27.44,37				43,80	24,78		17.28.8,62			B.
	(a) $\alpha$ Aquilæ.....	33,2	47,0	0,3	14,2	27,8	41,3	54,9	19.43.14,10				13,58	24,89		19.43.38,41			B.
July 1	(b) $\odot$ 1 L.....	58,6	13,2	27,7	42,6	57,4	11,8	26,6	6.39.42,55				41,87		1,42	6.40.7,43			B.
	(c) $\delta$ Ophiuchi.....	34,4	47,8	1,0	14,8	28,3	41,6	55,0	16.6.14,70				14,37	26,05		16.6.40,48			B.
	$\alpha$ Herculis.....	51,3	5,2	18,9	33,1	47,1	0,8	14,8	17.7.33,03				32,43	26,14		17.7.58,60			B.
	$\alpha$ Ophiuchi.....	1,6	15,4	28,9	43,0	57,0	10,6	24,3	17.27.42,97				42,40	26,18		17.28.8,59			B.
	(d) H. C. 32119.....	....	7,3	....	37,3	51,8	6,2	20,7	17.30.36,93				36,84			17.31.3,04			B.
	B.A.C. 5989.....	12,0	26,6	41,2	56,0	11,0	25,3	40,2	17.34.56,05				55,98			17.35.22,18			B.
	B.A.C. 6034.....	0,1	14,6	28,8	43,2	57,7	11,8	26,0	17.42.43,17				43,05			17.43.9,26			B.
	(e) H. C. 32706.....	23,1	37,2	51,3	5,4	19,8	34,0	48,0	17.46.5,54				5,41			17.46.31,62			B.
	H. C. 32865.....	25,8	40,2	54,6	9,3	24,2	38,4	53,0	17.50.9,36				9,27			17.50.35,49			B.
	B.A.C. 6098.....	44,0	58,2	12,7	27,2	41,7	56,0	10,3	17.53.27,16				27,06			17.53.53,28			B.
	(f) B.A.C. 6132.....	40,0	54,7	9,4	24,6	39,7	54,3	9,4	17.59.24,58				24,51			17.59.50,74			B.
	$\mu^1$ Sagittarii.....	50,9	5,3	19,8	34,5	49,1	3,2	17,4	18.4.34,31				34,20	26,34		18.5.0,43			B.
	(g) $\delta$ Ursæ Minoris..	35,5	23,5	9,0	57,4	46,2	30,5	15,3	18.19.56,77				38,50						B.
July 2	(h) $\odot$ 1 L.....	5,1	19,8	34,2	49,1	4,0	18,3	....	6.43.49,08				48,40		1,48	6.44.15,39			B.
	$\delta$ Ophiuchi.....	32,8	46,1	59,5	....	....	40,2	53,6	16.6.13,18				12,85	27,56					B.
	(i) $\beta$ Lyræ.....	....	....	....	15,1	30,7	46,4	1,6	18.44.14,28				13,43	27,73					B.
July 4	$\odot$ 1 L.....	17,6	32,0	46,7	1,4	16,4	30,8	45,4	6.52.1,47			-4,9	0,85		1,49	6.52.31,03			B.
	$\odot$ 2 L.....	34,9	49,3	4,0	18,6	33,6	48,0	2,6	6.54.18,72				18,10			6.54.48,28			B.
July 5	$\alpha$ Aquilæ.....	25,8	39,4	52,8	6,7	20,3	33,8	47,3	19.43.6,59				6,11	32,43					B.
	$\beta$ Aquilæ.....	54,6	8,2	21,8	35,6	49,3	2,3	16,0	19.47.35,40				34,95	32,51					B.
July 6	(k) $\odot$ 1 L.....	....	....	....	12,8	27,6	41,8	56,6	7.0.12,72				12,10		1,42	7.0.45,26			B.
	$\alpha$ Coronæ.....	11,0	26,0	41,0	56,3	11,8	26,7	41,7	15.27.56,36				55,68	33,64		15.28.29,34			B.
	(l) $\alpha$ Serpentis.....	49,2	....	16,2	30,2	44,0	57,3	10,6	15.36.30,06				29,60	33,65		15.37.3,27			B.
	$\delta$ Ophiuchi.....	26,3	40,2	53,1	7,0	20,6	33,8	47,3	16.6.6,90				6,60	33,80		16.6.40,29			B.
	Antares.....	7,3	22,2	37,2	52,3	7,6	22,3	37,3	16.19.52,31				52,26	33,71		16.20.25,97			B.
	$\zeta$ Aquilæ.....	26,4	40,1	53,9	8,0	22,0	35,6	49,2	18.58.7,89				7,35	33,81		18.58.41,21			B.
July 7	(k) $\odot$ 1 L.....	....	....	....	....	32,4	47,1	1,6	7.4.17,75				17,13			7.4.51,71			B.
	$\odot$ 2 L.....	50,9	5,6	19,8	35,0	49,7	4,0	18,6	7.6.34,80				34,18			7.7.8,76			B.
July 9	(k) $\zeta$ Aquilæ.....	....	....	....	....	18,1	31,7	45,4	18.58.3,99				3,45	37,74	1,37				B.
July 12	$\gamma$ Aquilæ.....	55,8	9,7	23,0	36,9	50,9	4,2	18,0	19.38.36,93			-6,1	36,22	41,99	1,35	19.39.18,33			B.
	$\alpha$ Aquilæ.....	16,3	29,9	43,3	57,2	11,2	24,4	37,8	19.42.57,16			+7,5	56,47	42,16		19.43.38,58			B.
	$\beta$ Aquilæ.....	45,2	59,0	12,2	26,1	39,9	53,0	6,8	19.47.26,03				25,37	42,18		19.48.7,48			B.
July 15	(m) Polaris SP.....	....	9,5	44,5	33,0	23,5	58,8	....	13.4.34,03				13,08		1,35				B.
	$\gamma$ Aquilæ.....	52,0	5,6	19,3	33,2	47,0	0,3	14,0	19.38.33,06				32,35	45,89					B.
July 19	(d) $\mu^1$ Sagittarii.....	26,1	40,2	54,7	9,3	24,1	38,1	52,4	18.4.9,28			-5,3	8,96	51,67	1,45	18.5.0,59			T.
	(n) $\zeta$ Aquilæ.....	8,7	....	36,3	50,3	4,4	18,0	....	18.57.50,30				49,60	51,65		18.58.41,29			T.
	(o) $\gamma$ Aquilæ.....	46,3	59,7	13,4	27,3	41,1	54,7	8,2	19.38.27,24				26,57	51,70		19.39.18,30			T.
	$\alpha$ Aquilæ.....	6,7	....	33,7	47,7	1,3	14,7	28,6	19.42.47,59				46,94	51,76		19.43.38,67			T.
	$\beta$ Aquilæ.....	35,8	49,3	2,7	16,7	30,2	43,7	57,0	19.47.16,49				15,90	51,72		19.48.7,64			T.
	Rigel.....	55,7	8,9	22,6	36,2	50,0	3,3	16,8	5.6.36,22				35,81	52,89	1,46				T.
	$\alpha$ Orionis.....	40,0	53,7	6,7	20,7	34,3	47,8	1,2	5.46.20,63				19,99	52,46					T.
July 20	(p) $\odot$ 2 L.....	....	....	45,2	59,9	14,6	28,7	43,0	7.58.59,87				59,11			7.59.51,70			T.
July 22	(o) $\alpha$ Aquilæ.....	2,6	16,1	29,7	43,5	57,0	10,5	24,1	19.42.43,36			+9,0	42,78	55,94	1,50	19.43.38,76			T.
	(q) $\beta$ Aquilæ.....	31,7	45,2	58,6	12,2	26,1	39,1	52,7	19.47.12,23				11,68	55,96		19.48.7,67			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>,349, -26<sup>s</sup>,905, -13<sup>s</sup>,633, +0<sup>s</sup>,010, +13<sup>s</sup>,656, +26<sup>s</sup>,895, +40<sup>s</sup>,327.

(a) Blazing. (b) Faint from cloud: 2 L invisible. (c) Unsteady. A thunderstorm, with hail and much rain, had passed over (d) Faint from cloud. (e) Faint. (f) Greatly diffused. (g) Steady. (h) Without the dark glass: 2 L hid. (i) Clouds passing. The times have been corrected by +1<sup>s</sup>. (k) Cloud. (l) Light cloud. (m) Clouded but steady. (n) Much obscured by cloud. (o) Cloudy. (p) Cloud: 1 L hid. (q) Extremely faint: dense clouds.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				s.	s.	s.	
July 22	(a) $\alpha^2$ Capricorni....	18,9	32,6	46,2	0,2	14,2	27,7	41,6	20. 9. 0,20	-5,5	-5,3	+9,0	59,93	56,07	1,50	20. 9. 55,94	T.		
	$\beta$ Tauri.....	18,0	33,3	48,3	3,9	19,3	34,5	49,7	5. 16. 3,85				3,06	56,81	1,49	5. 16. 59,88	T.		
	$\alpha$ Orionis.....	35,7	49,1	2,5	16,3	30,1	43,6	57,1	5. 46. 16,34				15,77	56,75		5. 47. 12,62	T.		
	(b)(c) Sirius.....	0,8	14,8	28,5	....	....	....	....	6. 37. 42,82				42,59	57,02		6. 38. 39,49	T.		
July 23	$\odot$ 1 L.....	54,7	9,0	23,3	38,0	52,4	6,5	20,7	8. 8. 37,80				37,11			8. 9. 34,11	T.		
	$\odot$ 2 L.....	9,2	23,7	37,8	52,7	6,9	21,2	35,4	8. 10. 52,41				51,72			8. 11. 48,72	T.		
July 25	$\odot$ 1 L.....	....	....	....	30,4	45,2	59,2	13,5	8. 16. 30,54			-5,5	29,84		1,49	8. 17. 29,78	T.		
	$\odot$ 2 L.....	1,7	16,0	30,1	44,8	59,2	13,1	27,7	8. 18. 44,66				43,96			8. 19. 43,90	T.		
	Regulus.....	51,1	4,7	18,5	32,3	46,7	0,2	14,0	9. 59. 32,50				31,87	60,11		10. 0. 31,91	T.		
	$\alpha$ Serpentis.....	22,5	36,2	49,6	3,4	17,1	30,2	43,9	15. 36. 3,27				2,70	60,39		15. 37. 3,09	T.		
	(d) $\alpha$ Aquilæ.....	57,7	11,5	25,0	38,6	52,5	6,0	19,3	19. 42. 38,66				38,07	60,67		19. 43. 38,72	T.		
	(e) $\beta$ Aquilæ.....	27,0	40,7	53,7	7,8	21,4	34,7	48,1	19. 47. 7,63				7,07	60,59		19. 48. 7,72	T.		
	$\beta$ Aquarii.....	....	....	37,2	51,0	4,5	18,0	31,3	21. 22. 50,87				50,50	60,68		21. 23. 51,25	T.		
	July 26	(f) $\odot$ 1 L.....	....	....	....	....	....	54,7	8,4	8. 20. 25,81					25,13		1,48	8. 21. 26,40	T.
$\odot$ 2 L.....		57,0	11,2	....	40,0	54,5	8,2	23,0	8. 22. 39,90				39,22			8. 23. 40,49	T.		
$\alpha$ Herculis.....		15,5	29,6	43,1	57,1	11,2	25,0	38,8	17. 6. 57,19				56,54	61,94		17. 7. 58,35	T.		
(g) $\delta$ Ursæ Minoris..		53,3	41,5	25,0	16,3	6,0	49,0	35,3	18. 19. 15,20				58,28			18. 20. 15,20	T.		
H.C. 34749.....		22,0	36,1	50,1	4,3	18,7	32,7	46,8	18. 36. 4,39				4,16			18. 37. 6,06	T.		
(b) H. C. 34882.....		25,2	39,6	53,8	8,2	22,7	37,0	....	18. 39. 8,25				8,03			18. 40. 9,93	T.		
$\beta$ Lyræ.....		51,6	7,7	23,8	40,0	56,3	12,1	28,3	18. 43. 39,97				39,11	62,10		18. 44. 41,02	T.		
(h) H. C. 35247.....		....	50,9	4,7	....	33,5	....	....	18. 47. 19,09				18,86			18. 48. 20,77	T.		
(i) $\zeta$ Aquilæ.....		58,2	12,1	26,1	....	54,0	7,2	21,3	18. 57. 39,82				39,17	62,09		18. 58. 41,09	T.		
July 27		$\delta$ Ophiuchi.....	57,0	10,3	23,7	37,3	50,9	4,2	17,7	16. 5. 37,30				36,89	63,37	1,40		T.	
July 28	(b) $\zeta$ Aquilæ.....	55,7	9,4	23,0	37,0	51,1	4,6	18,5	18. 57. 37,04				36,39	64,87	1,36		T.		
July 29	(b) $\odot$ 1 L.....	26,2	40,3	54,6	9,0	23,2	37,4	51,5	8. 32. 8,89				8,20		1,41	8. 33. 13,91	T.		
	$\odot$ 2 L.....	39,8	54,0	....	....	....	....	....	8. 34. 22,51				21,82			8. 35. 27,53	T.		
July 30	$\odot$ 1 L.....	19,2	33,6	47,3	2,1	16,3	30,7	44,7	8. 36. 1,98			+8,9	1,30		1,43	8. 37. 8,43	T.		
	$\odot$ 2 L.....	32,8	47,0	1,0	15,4	29,9	44,0	58,2	8. 38. 15,47				14,79			8. 39. 21,93	T.		
	$\beta$ Lyræ.....	46,1	2,1	18,0	34,4	50,7	6,6	22,3	18. 43. 34,31				33,44	67,75		18. 44. 41,18	T.		
	(k) H. C. 35411.....	24,0	38,1	52,0	....	....	34,7	....	18. 51. 6,35				6,11			18. 52. 13,86	T.		
	(k) $\zeta$ Aquilæ.....	52,7	6,7	20,1	34,2	....	....	....	18. 57. 34,23				33,58	67,68		18. 58. 41,33	T.		
	(l) $\gamma$ Aquilæ.....	30,2	43,7	57,3	....	....	....	....	19. 38. 11,13				10,51	67,82		19. 39. 18,30	T.		
	$\alpha$ Aquilæ.....	50,7	4,3	17,8	31,7	45,3	58,7	12,3	19. 42. 31,54				30,95	67,81		19. 43. 38,75	T.		
	H. C. 38314.....	12,2	26,2	40,2	54,8	9,0	22,8	36,7	19. 55. 54,56				54,32			19. 57. 2,13	T.		
	B.A.C. 6923.....	6,0	20,3	34,6	49,1	3,4	17,4	31,8	20. 0. 48,95				48,72			20. 1. 56,53	T.		
	(m) H. C. 38705.....	49,1	3,2	17,0	31,1	45,7	59,5	13,7	20. 4. 31,32				31,08			20. 5. 38,90	T.		
	$\alpha^2$ Capricorni.....	7,0	20,8	34,6	48,6	2,7	16,1	29,8	20. 8. 48,52				48,24	67,84		20. 9. 56,06	T.		
	H. C. 39095.....	16,2	30,3	44,2	58,7	12,7	26,4	40,3	20. 12. 58,40				58,14			20. 14. 5,97	T.		
	(m) B. (w.) xx. 419..	31,1	45,0	58,7	13,0	27,0	40,7	54,7	20. 16. 12,88				12,62			20. 17. 20,45	T.		
	(n) B.A.C. 7044.....	49,0	3,1	17,1	31,6	46,0	59,9	14,0	20. 19. 31,52				31,28			20. 20. 39,11	T.		
	(o) B. (w.) xx. 612..	52,1	5,9	19,8	34,0	48,0	1,7	15,3	20. 23. 33,83				33,56			20. 24. 41,40	T.		
	Aug. 2	$\alpha$ Herculis.....	5,4	19,2	33,0	47,1	1,1	14,8	28,7	17. 6. 47,04				-5,8	46,37	72,05	1,45	17. 7. 58,42	T.
		(p) $\delta$ Ursæ Minoris..	....	29,0	....	....	....	....	....	18. 19. 3,33					46,20				T.
$\gamma$ Aquilæ.....		25,7	39,6	53,0	7,0	20,7	34,1	47,8	19. 38. 6,84			6,20	72,13			19. 39. 18,40	T.		
$\alpha$ Aquilæ.....		46,4	59,7	13,2	27,2	40,8	54,4	8,0	19. 42. 27,10			26,49	72,28			19. 43. 38,69	T.		
$\beta$ Aquilæ.....		15,6	29,0	42,3	56,1	9,8	23,2	36,7	19. 46. 56,10			55,52	72,18			19. 48. 7,73	T.		
Aug. 3	(q) $\mu^3$ Sagittarii.....	4,0	18,2	32,7	47,3	1,8	16,1	30,6	18. 3. 47,25				47,02	73,58	1,41		T.		
Aug. 4	(r) $\odot$ 1 L.....	36,3	50,7	4,7	19,1	33,4	47,3	1,3	8. 55. 18,98				18,29		1,68	8. 56. 32,53	T.		
	$\odot$ 2 L.....	49,2	3,3	17,3	31,7	46,0	0,0	13,9	8. 57. 31,63				30,94			8. 58. 45,19	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) Very faint: clouds passing. (b) Cloudy. (c) Unsteady. (d) The counting was 30<sup>s</sup> slow. (e) The counting was 10<sup>s</sup> slow.  
 (f) Interruption by passing clouds. (g) 'Good.' The star was steady, but partially clouded. (h) Very faint from cloud: quite hid at the other wires.  
 (i) Disturbance, after wire I the counting was 30<sup>s</sup> fast. (k) Faint from cloud. (l) Dense cloud. (m) Very faint. (n) 'A brighter north-  
 preceding.' (o) 'A star of Mag. 10 and equal N.P.D. followed 40<sup>s</sup>.' (p) Seen only at this wire. (q) Cloudy afterwards. (r) Fringed  
 and extremely unsteady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Aug. 4	(a) $\gamma$ Aquilæ.....	23,0	36,8	....	4,0	17,8	31,3	44,9	19.38. 3,99	-5,5	-5,8	+8,9	3,35	74,98	1,68	19.39.18,35			T.
	(b) $\alpha$ Aquilæ.....	43,7	57,0	10,7	....	38,3	51,7	5,1	19.42.24,42				23,81	74,96		19.43.38,81			T.
	$\beta$ Aquilæ.....	12,7	26,2	39,7	53,4	7,0	20,2	33,7	19.46.53,27				52,69	75,01		19.48. 7,70			T.
	(b) $\alpha^2$ Capricorni....	59,7	13,7	27,3	41,7	55,3	8,9	22,7	20. 8.41,32				41,03	75,08		20. 9.56,06			T.
Aug. 5	⊙ 1 L.....	26,2	40,3	54,0	8,4	22,7	36,4	50,8	8.59. 8,40				7,60		1,67	9. 0.23,67			T.
	⊙ 2 L.....	....	52,9	6,7	21,0	35,3	49,2	....	9. 1.21,02				20,22			9. 2.36,29			T.
	(c) B. (w.) XXI. 252..	48,0	1,8	15,4	29,7	43,8	57,7	11,4	21.10.29,69				29,28			21.11.46,20			T.
	(d) B. (w.) XXI. 345..	16,3	30,1	43,7	57,3	11,8	25,2	39,0	21.13.57,63				57,18			21.15.14,10			T.
	B. (w.) XXI. 418..	....	44,2	57,7	11,7	25,7	39,2	....	21.17.11,70				11,26			21.18.28,18			T.
	$\beta$ Aquarii.....	54,5	7,7	21,2	34,9	48,6	2,0	15,7	21.22.34,94				34,42	76,91					T.
	(d) B. (w.) XXI. 719..	35,7	49,2	2,7	16,8	30,2	43,8	57,2	21.29.16,52				16,04			21.30.32,98			T.
	B. (w.) XXI. 830..	44,1	57,7	11,1	25,2	39,0	52,1	6,0	21.33.25,03				24,54			21.34.41,48			T.
	(d)(e) B. (w.) XXI. 906.	33,2	47,0	0,6	15,1	29,0	42,6	56,3	21.36.14,83				14,40			21.37.31,35			T.
	(d) B. (w.) XXI. 974..	40,7	....	8,0	21,8	35,6	49,2	2,5	21.39.21,73				21,27			21.40.38,22			T.
	H. C. 42612.....	44,3	58,1	11,6	25,6	39,2	52,7	6,4	21.43.25,41				24,93			21.44.41,88			T.
	(f) B. (w.) XXI. 1187..	....	53,0	....	20,6	34,4	....	1,1	21.49.20,44				19,95			21.50.36,91			T.
	(g) $\alpha$ Aquarii.....	19,4	32,7	46,2	59,8	13,3	26,8	40,1	21.56.59,76				59,15	76,98					T.
Aug. 6	⊙ 1 L.....	15,3	29,3	43,2	57,5	11,7	25,6	39,4	9. 2.57,43				56,62		1,54	9. 4.14,30			T.
	⊙ 2 L.....	27,3	41,3	55,3	9,7	23,9	37,8	51,8	9. 5. 9,59				8,78			9. 6.26,46			T.
	$\beta$ Lyrae.....	35,7	51,8	7,7	24,0	40,2	56,0	12,0	18.43.23,91				22,92	78,21		18.44.41,23			T.
	$\zeta$ Aquilæ.....	42,1	56,0	9,7	23,7	37,8	51,4	5,2	18.57.23,70				22,91	78,33		18.58.41,23			T.
	(h) $\gamma$ Aquilæ.....	19,2	33,6	46,9	0,8	14,7	28,2	41,7	19.38. 0,72				59,97	78,36		19.39.18,33			T.
	$\alpha$ Aquilæ.....	40,3	54,0	7,3	21,2	34,8	48,3	1,8	19.42.21 10				20,37	78,40		19.43.38,74			T.
	(i) $\beta$ Aquilæ.....	9,5	22,8	36,3	50,2	3,7	17,0	30,6	19.46.50,01				49,31	78,39		19.48. 7,68			T.
Aug. 8	(k) ⊙ 1 L.....	51,2	5,3	19,2	33,3	47,5	1,3	15,2	9.11.33,28				32,48		1,45	9.11.53,26			T.
	⊙ 2 L.....	3,3	17,2	....	....	....	....	....	9.13.45,35				44,55			9.14. 5,33			T.
	$\alpha$ Herculis.....	56,3	10,0	23,6	38,0	52,0	5,7	19,4	17. 7.37,86				37,07	21,28		17. 7.58,33			T.
	$\alpha$ Ophiuchi.....	6,7	20,5	33,9	47,9	2,0	15,7	29,3	17.27.48,00				47,23	21,19		17.28. 8,51			T.
	$\mu^1$ Sagittarii.....	56,4	10,7	25,0	39,7	54,3	8,4	23,0	18. 4.39,65				39,27	21,30		18. 5. 0,58			T.
	(l) $\delta$ Ursæ Minoris..	30,5	17,3	2,0	53,0	42,6	25,0	11,7	18.19.51,73				35,31						T.
	H. C. 34659.....	44,7	59,1	13,2	27,8	42,3	56,7	11,0	18.34.27,83				27,46			18.34.48,80			T.
	28-Sagittarii.....	....	....	55,2	10,1	24,7	39,2	53,7	18.37.10,01				9,65			18.37.31,00			T.
	(d) H. C. 34930.....	....	18,1	32,3	46,6	0,8	14,7	....	18.40.46,50				46,10			18.41. 7,45			T.
	$\beta$ Lyrae.....	32,7	48,7	4,5	20,8	37,1	53,0	9,0	18.44.20,82				19,88	21,29		18.44.41,18			T.
	(m) H. C. 36239.....	53,1	7,2	21,3	35,8	50,3	4,3	18,3	19. 9.35,76				35,37			19. 9.56,75			T.
	B.A.C. 6616.....	58,7	12,9	27,0	41,3	55,9	10,0	24,3	19.12.41,44				41,06			19.13. 2,44			T.
	(n) $\chi^2$ Sagittarii.....	23,2	38,2	52,7	7,8	22,8	37,3	52,0	19.16. 7,72				7,37			19.16.28,76			T.
	(o) H. C. 36678.....	23,4	37,7	51,7	6,2	21,0	35,0	49,4	19.19. 6,34				5,97			19.19.27,36			T.
	B.A.C. 6683.....	29,2	43,8	58,0	12,7	27,3	41,7	56,2	19.23.12,70				12,33			19.23.33,72			T.
	H. C. 36999.....	21,0	35,3	49,3	4,0	18,2	32,5	46,6	19.26. 3,84				3,45			19.26.24,84			T.
	(o) H. C. 37491.....	27,0	41,7	....	12,0	27,0	41,5	56,3	19.37.11,74				11,39			19.37.32,80			T.
	$\alpha$ Aquilæ.....	37,3	50,8	4,3	18,2	31,7	45,3	58,7	19.43.18,05				17,32	21,46		19.43.38,73			T.
	$\beta$ Aquilæ.....	6,3	19,7	33,2	47,0	0,7	14,0	27,5	19.47.46,92				46,22	21,49		19.48. 7,64			T.
	H. C. 38096.....	54,8	9,4	23,7	38,3	52,7	6,8	21,1	19.51.38,12				37,74			19.51.59,16			T.
	B.A.C. 6878.....	59,0	13,5	28,0	42,7	57,5	12,0	26,6	19.54.42,75				42,39			19.55. 3,81			T.
	H. C. 38396.....	50,3	5,0	19,7	34,7	49,7	4,0	18,7	19.58.34,58				34,72			19.58.56,15			T.
Aug. 9	⊙ 1 L.....	38,5	52,7	6,3	20,7	34,7	48,6	2,7	9.15.20,60				19,79		1,48	9.15.41,97			T.
	⊙ 2 L.....	50,6	4,3	18,1	32,7	46,7	0,4	14,7	9.17.32,50				31,69			9.17.53,87			T.
	Antares.....	....	33,7	48,2	3,6	18,7	33,5	48,4	16.20. 3,53				3,19	22,49		16.20.25,81			T.
	$\alpha$ Ophiuchi.....	5,0	18,7	32,7	46,7	0,7	14,0	27,8	17.27.46,52				45,75	22,66		17.28. 8,44			T.
	$\mu^1$ Sagittarii.....	54,8	9,4	23,7	38,1	52,7	7,0	21,3	18. 4.38,15				37,77	22,79		18. 5. 0,50			T.
	(n) H. C. 33604.....	17,2	31,2	45,4	59,9	14,4	28,2	42,6	18. 8.59,85				59,46			18. 9.22,19			T.
	H. C. 33748.....	41,3	55,4	9,7	24,0	38,5	52,4	6,7	18.12.24,00				23,61			18.12.46,34			T.
	(p) H. C. 33917.....	48,0	2,3	17,0	31,7	46,3	0,6	15,0	18.16.31,55				31,18			18.16.53,92			T.
	H. C. 34117.....	1,0	15,3	29,7	44,7	59,1	13,2	27,6	18.20.44,37				44,00			18.21. 6,74			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

Aug. 7, 22<sup>d</sup>, Hardy was put forward 1<sup>m</sup>.

(a) Much clouded, often not seen. (b) Very faint from cloud. (c) Cloudy. (d) Extremely faint. (e) 'Another south-preceding.'  
 (f) Continually hid by clouds. Too cloudy for more observations. (g) Scarcely seen at times. (h) Observed hurriedly at wire I. (i) The noted times have been decreased 1<sup>s</sup>.  
 (k) Interruption by clouds: both limbs unsteady and badly defined. (l) 'Very good.' (m) 'Only one star.'  
 (n) 'A brighter south-preceding.' (o) Doubtful observation, the star being very faint. (p) Too faint to be well observed.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Aug. 9	B.A.C. 6304.....	10,4	25,7	40,0	55,0	10,0	24,7	39,3	18. 23. 55,02	-5,5	-6,4	+6,9	54,66		1,48	18. 24. 17,40			T.
	H. C. 34401.....	51,7	5,8	20,3	34,6	49,0	2,7	17,0	18. 27. 34,44				34,05			18. 27. 56,80			T.
	H. C. 34504.....	36,3	50,7	5,0	19,6	34,7	48,7	3,1	18. 30. 19,73				19,36			18. 30. 42,11			T.
	H. C. 34659.....	43,2	57,7	11,8	26,6	41,1	55,3	9,7	18. 34. 26,49				26,12			18. 34. 48,88			T.
	(a) H. C. 34787.....	2,3	17,1	32,0	....	1,2	16,0	30,0	18. 37. 46,43				46,06			18. 38. 8,82			T.
	30 Sagittarii.....	56,4	11,0	25,3	40,3	54,9	9,2	23,8	18. 41. 40,12				39,75			18. 42. 2,51			T.
	σ Sagittarii.....	3,7	18,7	33,7	49,0	4,2	18,7	33,7	18. 45. 48,82				48,47			18. 46. 11,24			T.
	B.A.C. 6465.....	15,0	30,0	44,5	59,6	14,7	29,3	44,2	18. 48. 59,62				59,27			18. 49. 22,04			T.
	B.A.C. 6490.....	23,0	38,0	52,6	7,7	22,7	37,3	52,1	18. 53. 7,63				7,28			18. 53. 30,06			T.
	ζ Aquilæ.....	37,7	51,7	5,2	19,3	33,3	46,9	0,7	18. 58. 19,26				18,47	22,76		18. 58. 41,25			T.
	γ Aquilæ.....	15,2	28,7	42,4	56,3	10,0	23,5	37,0	19. 38. 56,16				55,41	22,92		19. 39. 18,23			T.
	β Aquilæ.....	5,1	18,7	32,0	45,7	59,5	12,7	25,8	19. 47. 45,64				44,94	22,77		19. 48. 7,77			T.
	B. (w.) XIX. 1523	0,2	14,3	28,1	42,3	56,3	10,2	24,2	19. 52. 42,23				41,82			19. 53. 4,66			T.
	(b) B. (w.) XIX. 1418	19,7	33,5	47,3	1,6	15,6	29,3	43,1	19. 56. 1,44				1,03			19. 56. 23,87			T.
	B.A.C. 6903.....	40,4	54,7	8,7	23,3	37,6	51,7	5,9	19. 59. 23,18				22,78			19. 59. 45,62			T.
	α² Capricorni.....	52,2	6,0	19,7	33,7	47,7	1,3	15,0	20. 9. 33,66				33,22	22,91		20. 9. 56,08			T.
Aug. 10	(c) ⊙ 1 L.....	25,2	39,3	53,2	7,4	21,7	35,3	49,2	9. 19. 7,33				6,52		1,51	9. 19. 30,26			T.
	⊙ 2 L.....	36,7	51,0	4,6	18,8	33,0	46,7	0,8	9. 21. 18,80				17,99			9. 21. 41,73			T.
	B.A.C. 6088.....	54,7	9,1	23,7	38,7	53,2	7,7	22,1	17. 52. 38,46				38,10			17. 53. 2,37			T.
	B.A.C. 6111.....	3,7	18,7	32,8	48,0	3,0	17,3	32,1	17. 55. 47,95				47,59			17. 56. 11,87			T.
	B.A.C. 6133.....	44,4	58,9	13,3	27,8	42,7	56,7	11,2	17. 59. 27,86				27,47			17. 59. 51,75			T.
	B.A.C. 6161.....	39,7	54,0	8,7	23,7	38,3	52,7	7,7	18. 2. 23,54				23,19			18. 2. 47,48			T.
	μ¹ Sagittarii.....	....	7,7	22,0	36,6	51,3	5,6	19,7	18. 4. 36,61				36,23	24,32		18. 5. 0,52			T.
	B.A.C. 6194.....	44,1	59,1	14,1	29,6	44,7	59,7	14,7	18. 8. 29,43				29,09			18. 8. 53,38			T.
	H. C. 33748.....	39,7	54,0	8,0	22,4	36,9	50,8	5,0	18. 12. 22,40				22,01			18. 12. 46,31			T.
	(d) H. C. 33855.....	23,3	38,2	53,4	8,7	24,0	38,7	53,4	18. 15. 8,53				8,19			18. 15. 32,49			T.
	B.A.C. 6267.....	17,7	31,7	45,7	0,1	14,7	28,3	42,3	18. 19. 0,07				59,68			18. 19. 23,98			T.
	B.A.C. 6292.....	37,1	51,3	5,3	20,0	34,3	48,4	2,4	18. 22. 19,82				19,43			18. 22. 43,74			T.
	(e) B.A.C. 6333.....	22,7	37,1	51,2	5,6	20,2	34,2	48,3	18. 28. 5,62				5,22			18. 28. 29,53			T.
	H. C. 34619.....	37,0	51,1	5,3	20,0	34,6	48,7	3,0	18. 33. 19,95				19,56			18. 33. 43,88			T.
	H. C. 34749.....	0,0	14,0	27,8	42,3	56,7	10,3	24,3	18. 36. 42,20				41,81			18. 37. 6,13			T.
	(f) H. C. 34889.....	7,7	21,6	35,7	50,1	4,6	18,6	32,7	18. 39. 50,14				49,75			18. 40. 14,08			T.
	β Lyrae.....	29,7	45,7	1,4	17,9	34,0	50,0	6,0	18. 44. 17,82				16,83	24,27		18. 44. 41,16			T.
	H. C. 35224.....	45,3	0,0	14,4	29,4	44,3	58,9	13,2	18. 47. 29,36				29,00			18. 47. 53,33			T.
	H. C. 35374.....	9,7	24,0	38,0	52,3	6,9	20,8	35,0	18. 50. 52,38				52,00			18. 51. 16,34			T.
	H. C. 35499.....	24,3	38,7	52,9	7,3	21,7	35,7	50,0	18. 54. 7,23				6,83			18. 54. 31,17			T.
	ζ Aquilæ.....	36,3	50,0	3,7	17,7	31,6	45,3	59,3	18. 58. 17,70				16,91	24,31		18. 58. 41,25			T.
	α Aquilæ.....	34,4	48,0	1,3	15,2	28,7	42,2	55,8	19. 43. 15,09				14,36	24,42		19. 43. 38,75			T.
	β Aquilæ.....	3,4	16,7	30,4	44,0	57,7	10,8	24,7	19. 47. 43,96				43,26	24,45		19. 48. 7,66			T.
	H. C. 38081.....	40,1	54,2	8,9	23,7	38,0	52,3	6,4	19. 51. 23,37				22,98			19. 51. 47,38			T.
	B.A.C. 6878.....	56,0	10,6	25,1	39,9	54,7	9,0	23,7	19. 54. 39,86				39,50			19. 55. 3,90			T.
	H. C. 38367.....	56,6	11,0	25,2	39,7	54,0	7,9	22,0	19. 57. 39,49				39,11			19. 58. 3,52			T.
	H. C. 38517.....	30,9	46,0	0,2	15,2	30,8	45,4	0,1	20. 1. 15,52				15,17			20. 1. 39,58			T.
Aug. 11	(g) ⊙ 1 L.....	11,2	25,3	38,4	53,3	7,2	21,1	35,1	9. 22. 53,08				52,29		1,41	9. 23. 17,54			T.
	⊙ 2 L.....	22,6	36,7	50,5	4,7	18,7	32,7	46,5	9. 25. 4,63				3,84			9. 25. 29,09			T.
	α Aquilæ.....	33,0	46,6	59,9	13,4	27,4	40,6	54,7	19. 43. 13,66				12,93	25,84		19. 43. 38,79			T.
	β Aquilæ.....	1,7	15,4	29,0	42,7	56,4	9,7	23,0	19. 47. 42,55				41,85	25,86		19. 48. 7,71			T.
	H. C. 38782.....	20,2	....	49,6	4,4	19,1	34,0	48,2	20. 7. 4,34				3,99			20. 7. 29,87			T.
	α² Capricorni.....	49,4	3,1	16,7	30,7	44,7	58,3	12,0	20. 9. 30,75				30,31	25,82		20. 9. 56,20			T.
	B. (w.) XX. 346..	16,0	30,2	44,2	58,1	12,3	25,7	39,7	20. 13. 58,03				57,62			20. 14. 23,51			T.
	B. (w.) XX. 419..	13,1	27,2	40,7	55,2	9,2	23,0	36,7	20. 16. 55,01				54,60			20. 17. 20,49			T.
	B.A.C. 7049.....	46,7	1,2	15,7	30,7	45,7	59,7	14,2	20. 20. 30,55				30,19			20. 20. 56,09			T.
	H. C. 39518.....	30,2	44,0	57,6	12,0	26,0	39,7	53,3	20. 24. 11,83				11,40			20. 24. 37,30			T.
	B.A.C. 7102.....	49,3	3,7	18,0	32,7	47,3	1,4	15,7	20. 27. 32,58				32,21			20. 27. 58,11			T.
	B.A.C. 7123.....	39,7	53,9	7,7	22,2	36,5	50,2	4,3	20. 30. 22,07				21,67			20. 30. 47,58			T.
	H. C. 39926.....	46,0	0,6	14,4	29,0	43,3	57,6	11,7	20. 33. 28,95				28,55			20. 33. 54,46			T.
	(g) B. (w.) XX. 932..	....	41,3	....	9,2	23,7	37,2	51,3	20. 36. 9,34				8,95			20. 36. 34,86			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40°,349, - 26°,905, - 13°,633, + 0°,010, + 13°,656, + 26°,895, + 40°,327.

(a) 'Very bad: too faint.' (b) Extremely faint. (c) Unsteady. (d) 'A brighter north-preceding.' (e) 'A fainter north-preceding.'  
 (f) 'The south-following of two,' the other being H. C. 34884. (g) 'One south-following.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Aug. 11	(a) B. (w.) xx. 1031.	21,3	36,0	49,4	....	17,6	31,2	45,1	20.40.34,3	-5,5	-6,4	+6,9	3,00		1,41	20.40.28,91			T.
	H. C. 40311.....	3,2	17,4	31,7	46,3	0,7	14,7	29,0	20.44.46,14				45,76			20.45.11,68			T.
	H. C. 40410.....	46,9	1,1	14,8	29,3	43,7	57,2	11,7	20.47.29,25				28,86			20.47.54,78			T.
	α Pegasi.....	21,6	35,3	49,2	3,2	17,2	30,8	45,0	22.57.3,18				2,40	26,14		22.57.28,45			T.
Aug. 12	γ Aquilæ.....	10,7	24,5	38,0	51,9	5,8	19,2	32,9	19.38.51,85				51,10	27,22	1,38	19.39.18,32			T.
	(b) α Aquilæ.....	31,5	45,1	58,4	12,2	26,0	39,6	53,1	19.43.12,27				11,54	27,23		19.43.38,76			T.
	β Aquilæ.....	0,7	14,2	27,7	41,1	54,8	8,2	21,7	19.47.41,20				40,50	27,20		19.48.7,73			T.
	(c) Neptune.....	26,7	40,2	53,7	7,4	21,2	34,7	48,2	22.58.7,45				6,97			22.58.34,38			T.
Aug. 13	(d)(e) ⊙ 1 L.....	41,8	55,7	9,6	23,7	38,0	51,4	5,3	9.30.23,64				22,85		1,40	9.30.50,88			T.
	⊙ 2 L.....	52,7	6,7	....	34,3	48,7	2,4	16,4	9.32.34,51				33,72			9.33.1,75			T.
	(d) β Lyræ.....	25,6	41,3	57,3	13,7	30,0	45,7	1,7	18.44.13,61				12,63	28,43		18.44.41,19			T.
	α Aquilæ.....	29,8	43,7	57,2	10,7	24,7	37,9	51,4	19.43.10,77				10,04	28,72		19.43.38,66			T.
	(f) β Aquilæ.....	59,2	12,7	25,8	39,7	53,7	6,8	20,2	19.47.39,73				39,03	28,67		19.48.7,66			T.
	α Aquarii.....	7,7	21,2	34,4	48,0	1,7	15,1	28,5	21.57.48,09				47,48	28,75		21.58.16,23			T.
Aug. 17	(g)(b) ⊙ 1 L.....	35,5	49,4	3,4	17,3	31,3	45,2	58,7	9.45.17,26				16,50		1,51	9.45.50,48			T.
	⊙ 2 L.....	46,0	59,8	13,7	27,7	41,7	55,6	9,3	9.47.27,67				26,91			9.48.0,90			T.
Aug. 18	β Lyræ.....	17,7	33,8	49,6	6,0	22,2	38,1	54,1	18.44.5,93				4,95	36,04					T.
	α* Capricorni.....	38,9	52,7	6,5	20,5	34,4	48,0	1,7	20.9.20,38				19,95	36,18					T.
Aug. 20	α Herculis.....	38,3	52,1	5,7	19,9	34,0	47,8	1,7	17.7.19,93				19,20	38,99	1,49	17.7.58,20			T.
	μ <sup>1</sup> Sagittarii.....	38,7	52,9	7,1	21,7	36,4	50,7	5,0	18.4.21,78				21,44	39,01		18.5.0,50			T.
	(b) α Aquilæ.....	....	33,1	46,3	0,4	....	27,3	41,0	19.43.0,22				59,55	39,18		19.43.38,72			T.
	α Aquarii.....	57,1	10,6	23,7	37,6	51,2	4,6	17,8	21.57.37,52				36,96	39,35		21.58.16,26			T.
Aug. 21	(h) Procyon.....	....	....	....	55,7	9,2	22,7	36,1	7.30.55,60				54,96	41,39	1,45				T.
	Pollux.....	52,4	7,7	22,7	38,2	53,7	8,8	24,2	7.35.38,25				37,41	41,43					T.
Aug. 22	⊙ 1 L.....	1,5	15,0	28,7	42,4	56,8	10,2	24,0	10.3.42,66				41,96			10.4.23,52			T.
	⊙ 2 L.....	11,0	24,7	38,2	52,3	6,5	19,9	33,6	10.5.52,31				51,61			10.6.33,17			T.
Aug. 23	μ <sup>1</sup> Sagittarii.....	33,4	47,7	1,9	16,6	31,3	45,7	59,9	18.4.16,64	+1,8	+3,4	+13,6	17,45	42,96	1,44				T.
	δ Ursæ Minoris..	48,0	35,0	18,3	11,0	0,0	42,7	28,5	18.19.11,93				8,55						T.
	Procyon.....	11,5	24,7	38,2	52,0	5,4	18,7	32,7	7.30.51,88				52,45	43,95	1,41	7.31.36,47			T.
	Pollux.....	....	3,7	18,7	34,3	49,8	4,8	20,1	7.35.34,26				34,78	44,11		7.36.18,81			T.
Aug. 24	(i) ⊙ 1 L.....	19,7	33,4	47,1	1,2	15,1	28,5	42,3	10.11.1,04				1,58			10.11.45,76			T.
	⊙ 2 L.....	29,2	43,2	56,7	....	24,2	38,1	51,9	10.13.10,55				11,09			10.13.55,27			T.
	α Aquilæ.....	12,7	26,2	39,7	53,6	7,2	20,7	34,3	19.42.53,48				54,04	44,66		19.43.38,78			T.
	β Aquilæ.....	41,7	55,3	8,6	22,3	36,2	49,3	2,8	19.47.22,31				22,87	44,78		19.48.7,61			T.
	(k) B. (w.) xix. 1323.	37,2	51,2	5,0	19,2	33,7	47,1	1,1	19.52.19,22				20,01			19.53.4,76			T.
	B. (w.) xxi. 348..	53,2	7,1	20,9	35,0	49,1	2,7	16,7	21.14.34,96				35,73			21.15.20,56			T.
	B. (w.) xxi. 418..	1,2	15,1	28,7	42,7	56,7	10,2	24,0	21.17.42,66				43,42			21.18.28,25			T.
	B. (w.) xxi. 495..	....	19,3	33,0	47,0	0,8	14,3	....	21.20.46,88				47,64			21.21.32,48			T.
	β Aquarii.....	25,4	38,8	52,2	6,0	19,7	33,0	46,4	21.23.5,93				6,63	44,83		21.23.51,47			T.
Aug. 25	(l) ⊙ 1 L.....	....	....	....	40,1	54,1	7,4	21,1	10.14.40,04				40,58			10.15.26,17			T.
	⊙ 2 L.....	8,3	22,0	35,7	49,7	3,4	16,9	30,7	10.16.49,53				50,07			10.17.35,66			T.
Aug. 26	⊙ 1 L.....	....	51,4	4,7	18,6	32,7	46,3	59,7	10.18.18,72				19,10		1,51	10.19.6,12			T.
	⊙ 2 L.....	46,8	0,7	14,1	28,1	42,0	55,6	9,3	10.20.28,09				28,47			10.21.15,49			T.
Aug. 27	(m) β Lyræ.....	3,4	19,2	35,2	51,4	7,3	23,4	39,7	18.43.51,37				51,78	49,07		18.44.40,84			T.
	γ Aquilæ.....	47,7	1,7	15,0	28,8	42,7	56,2	9,8	19.38.28,85				29,22	49,02		19.39.18,34			T.
	(b) α Aquilæ.....	....	21,8	35,3	49,2	2,8	16,4	29,9	19.42.49,10				49,49	49,19		19.43.38,61			T.
	β Aquilæ.....	....	....	4,3	18,2	31,8	45,2	58,7	19.47.18,11				18,50	49,13		19.48.7,63			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40<sup>h</sup>34<sup>m</sup>9<sup>s</sup>, -26<sup>h</sup>9<sup>m</sup>05<sup>s</sup>, -13<sup>h</sup>6<sup>m</sup>33<sup>s</sup>, +0<sup>h</sup>0<sup>m</sup>10<sup>s</sup>, +13<sup>h</sup>6<sup>m</sup>56<sup>s</sup>, +26<sup>h</sup>8<sup>m</sup>95<sup>s</sup>, +40<sup>h</sup>32<sup>m</sup>7<sup>s</sup>.

(a) 'A fainter of somewhat greater N.P.D. followed 9<sup>a</sup>.' (b) Cloudy. (c) 'Very good.' (d) Faint from cloud. (e) Very steady.  
 (f) Disturbance throughout. (g) Wire IV was written down 13,3. (h) Not seen earlier. (i) Dense cloud. (k) Very faint from cloud.  
 (l) Cloudy the rest of the day. (m) 'Complete distraction by noise: bad observation.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"				"	s.	s.	
Aug.27	$\alpha$ Aquilæ.....	46,2	59,7	12,9	26,7	40,2	53,6	6,9	21. 57. 26,60	+1,8	+3,3	+10,1	27,04	49,30	1,51	21. 58. 16,30		T.	
Aug.29	(a) Polaris SP.....	.....	.....	.....	.....	23,0	58,0	44,5	13. 5. 33,27				38,75		1,55			T.	
	Spica.....	54,2	7,7	21,2	35,2	49,1	2,5	16,1	13. 16. 35,14				35,66	51,81		13. 17. 27,46		T.	
	$\gamma$ Aquilæ.....	44,7	58,5	11,7	25,7	39,7	53,1	6,7	19. 38. 25,73				26,10	52,12		19. 39. 18,31		T.	
	$\alpha$ Aquilæ.....	5,2	18,8	32,3	46,2	59,8	13,3	26,8	19. 42. 46,06				46,45	52,22		19. 43. 38,67		T.	
	$\beta$ Aquilæ.....	34,3	47,7	1,3	15,2	28,7	41,9	55,4	19. 47. 14,93				15,32	52,30		19. 48. 7,54		T.	
Sept.21	(b) $\epsilon$ Aquilæ.....	27,8	41,8	55,6	9,6	23,6	37,3	51,0	18. 57. 9,53	-11,0	+2,7	+9,1	8,95	91,74	1,82	18. 58. 40,59		B.	
	(c) H. C. 36516.....	36,2	50,8	5,2	19,6	34,6	49,2	3,7	19. 14. 19,90				19,45			19. 15. 51,11		B.	
	B.A.C. 6666.....	31,9	47,0	2,1	17,3	32,3	47,4	2,4	19. 19. 17,20				16,73			19. 20. 48,40		B.	
	H. C. 38503.....	2,2	16,3	30,6	44,8	59,1	13,3	27,1	19. 59. 44,77				44,34			20. 1. 16,06		B.	
	$\alpha^2$ Capricorni....	43,3	57,0	10,7	24,4	38,3	52,0	6,0	20. 8. 24,53				24,12	91,74		20. 9. 55,85		B.	
	Neptune.....	24,1	37,8	51,3	4,7	18,3	31,8	45,6	22. 53. 4,80				4,37			22. 54. 36,31		B.	
	$\alpha$ Pegasi.....	15,7	29,8	43,6	57,6	11,6	25,3	39,3	22. 55. 57,56				56,98	91,88		22. 57. 28,92		B.	
	(d) $\alpha$ Andromedæ...	33,6	48,6	3,6	18,8	34,3	49,5	4,7	23. 59. 19,02				18,38	91,95		0. 0. 50,40		B.	
Sept.22	⊙ 1 L.....	21,7	35,3	48,8	2,0	15,6	29,2	42,6	11. 55. 2,17				1,66		1,68	11. 56. 34,63		B.	
	⊙ 2 L.....	30,0	43,4	56,8	10,0	24,0	37,2	50,8	11. 57. 10,31				9,80			11. 58. 42,77		B.	
	$\zeta$ Aquilæ.....	26,3	40,1	53,8	7,7	21,8	35,4	49,2	18. 57. 7,76				7,18	93,49		18. 58. 40,58		B.	
	(e) H. C. 36016.....	6,0	20,1	35,0	49,3	4,2	18,3	33,2	19. 3. 49,45				49,02			19. 5. 22,49		B.	
	(f) H. C. 36196.....	56,3	.....	.....	.....	.....	8,2	23,4	19. 7. 39,64				39,21			19. 9. 12,68		B.	
	(g) H. C. 36196 B.....	.....	.....	38,2	.....	.....	.....	.....	19. 7. 39,98				39,35			19. 9. 12,82		B.	
	$\alpha$ Aquilæ.....	24,6	38,3	51,7	5,3	19,2	32,6	46,2	19. 42. 5,41				4,86	93,52		19. 43. 38,37		B.	
	$\beta$ Aquilæ.....	53,8	7,2	20,8	34,2	48,2	1,3	15,0	19. 46. 34,36				33,81	93,52		19. 48. 7,33		B.	
	B.A.C. 6878.....	46,7	1,3	15,8	30,3	45,2	59,6	14,2	19. 53. 30,44				29,99			19. 55. 3,51		B.	
	H. C. 38503.....	0,2	14,4	28,6	43,0	57,2	11,2	25,6	19. 59. 42,88				42,45			20. 1. 15,98		B.	
	(h) A. (o.) 20308....	40,8	55,4	10,3	24,4	.....	.....	.....	20. 2. 24,80				24,35			20. 3. 57,88		B.	
	$\alpha^2$ Capricorni....	41,3	55,2	9,0	22,6	36,7	50,3	4,2	20. 8. 22,76				22,35	93,50		20. 9. 55,89		B.	
	B.A.C. 7009.....	0,2	14,0	28,0	41,7	56,0	9,8	23,6	20. 13. 41,90				41,50			20. 15. 15,05		B.	
	B.A.C. 7069.....	22,2	36,8	51,3	6,0	20,8	35,3	49,7	20. 22. 6,02				5,57			20. 23. 39,13		B.	
	(i) B. (w.) xx. 664..	19,4	33,8	47,2	1,7	15,7	29,3	43,7	20. 25. 1,54				1,13			20. 26. 34,69		B.	
	B. (w.) xx. 664 B.	.....	.....	57,8	11,4	.....	.....	.....	20. 25. 1,86				1,25			20. 26. 34,81		B.	
	B. (w.) xx. 790..	50,2	4,2	17,9	32,1	46,1	0,1	13,9	20. 29. 32,07				31,66			20. 31. 5,23		B.	
	(k) H. C. 39981.....	16,1	30,4	44,8	59,1	13,0	27,8	.....	20. 33. 59,02				58,60			20. 35. 32,17		B.	
Sept.23	(l) ⊙ 1 L.....	55,8	9,3	22,8	36,2	49,9	3,3	16,7	11. 58. 36,29				35,78		1,71	12. 0. 10,29		B.	
	⊙ 2 L.....	3,9	17,4	30,8	.....	.....	11,3	24,9	12. 0. 44,37				43,86			12. 2. 18,37		B.	
	(m) $\zeta$ Aquilæ.....	24,8	38,7	52,4	6,2	20,2	33,8	47,9	18. 57. 6,29				5,71	94,94		18. 58. 40,71		B.	
	H. C. 36516.....	32,4	47,3	1,8	16,4	31,2	45,7	0,3	19. 14. 16,45				16,00			19. 15. 51,02		B.	
	(n) H. C. 36777.....	10,2	24,3	38,3	53,1	7,6	21,6	36,0	19. 19. 53,01				52,59			19. 21. 27,62		B.	
	B.A.C. 6683.....	16,0	30,1	44,2	58,8	13,6	27,8	42,2	19. 21. 58,96				58,53			19. 23. 33,56		B.	
	H. C. 37096.....	25,0	39,6	53,9	8,3	23,2	37,7	52,0	19. 27. 8,53				8,10			19. 28. 43,14		B.	
	$\gamma$ Aquilæ.....	2,6	16,2	29,7	43,4	57,3	10,8	24,5	19. 37. 43,50				42,93	94,96		19. 39. 17,98		B.	
	$\alpha$ Aquilæ.....	23,4	36,8	50,3	3,8	17,5	31,3	44,6	19. 42. 3,96				3,41	94,95		19. 43. 38,47		B.	
	$\beta$ Aquilæ.....	52,2	5,8	19,2	32,8	46,4	59,8	13,3	19. 46. 32,78				32,23	95,08		19. 48. 7,29		B.	
	$\alpha^2$ Capricorni....	38,8	53,5	7,4	21,2	35,1	48,8	2,5	20. 8. 21,04				20,63	95,20		20. 9. 55,72		B.	
	(o) B. (w.) xx. 566..	35,2	.....	2,8	16,6	31,3	45,3	58,4	20. 21. 16,98				16,57			20. 22. 51,67		B.	
	B. (w.) xx. 566 B.	.....	.....	13,2	26,8	.....	.....	.....	20. 21. 17,50				16,89			20. 22. 51,99		B.	
	(o) B. (w.) xx. 664..	.....	31,4	45,7	0,1	14,0	27,7	.....	20. 24. 59,79				59,39			20. 26. 34,50		B.	
	B. (w.) xx. 664 B.	.....	.....	56,3	9,8	.....	.....	.....	20. 25. 0,31				59,71			20. 26. 34,82		B.	
	B.A.C. 7128.....	10,1	24,8	39,4	54,2	9,2	23,9	38,7	20. 29. 54,33				53,88			20. 31. 28,99		B.	
	H. C. 40235.....	57,0	11,3	25,2	39,4	53,8	7,7	21,8	20. 41. 39,46				39,04			20. 43. 14,17		B.	
	(o) H. C. 40488.....	.....	44,1	58,9	13,2	28,2	42,3	.....	20. 48. 13,35				12,92			20. 49. 48,05		B.	
	H. C. 40488 B...	58,5	12,9	11,9	26,0	.....	.....	.....	20. 48. 13,61				12,98			20. 49. 48,11		B.	
	H. C. 40622.....	.....	51,2	5,8	20,3	35,2	49,8	.....	20. 51. 20,47				20,03			20. 52. 55,17		B.	
	H. C. 40744.....	28,8	43,2	57,2	11,4	25,8	39,9	54,2	20. 54. 11,50				11,08			20. 55. 46,22		B.	
	B. (w.) xx. 1501.	49,2	3,2	17,1	30,8	44,9	58,5	12,2	20. 57. 30,84				30,43			20. 59. 5,58		B.	
	(o) B. (w.) xx1. 15..	45,7	59,6	.....	26,3	40,8	.....	.....	21. 0. 26,95				26,53			21. 2. 1,68		B.	
	B. (w.) xx1. 15 B.	.....	.....	22,6	35,9	.....	.....	.....	21. 0. 27,25				26,63			21. 2. 1,78		B.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40°,349, - 26°,905, - 13°,633, + 0°,010, + 15°,656, + 26°,895, + 40°,327.

(a) Previously hid by cloud. (b) During the suspension of the observations, four dark bars for observing faint objects, were fixed in the eye-piece, two on each side of the seven wires, and other alterations were made, as mentioned in the Introduction. (c) 'Three in a line preceded.' (d) Blazing. (e) Very faint at times from cloud. 'One south-following.' (f) Faint from cloud. (g) The letter B attached to the name of the object indicates that the transit was taken at the edges of the bars. For an account of the reduction of these observations, and a table of equatorial intervals, see the Introduction. (h) Observed doubtfully on account of clouds. This is No. 20308 in Oeltzen's Catalogue of Argelander's southern zones. (i) Too faint to be well observed at the wires: the transits at the bars were reckoned best. (k) Cloudy: wire V doubtful. (l) Faint: sky overcast and heavy clouds passing. (m) The counting was 10° fast. (n) 'One of equal magnitude north-preceding.' (o) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Sept. 23	B. (w.) XXI. 90...	22,3	36,2	49,8	3,7	17,7	31,3	45,2	21. 4. 3,74	-11,0	+2,7	+9,1	3,32		1,71	21. 5. 38,47			B.
	H. C. 41276.....	38,2	52,3	6,7	20,9	35,5	49,7	4,2	21. 7. 21,07				20,64			21. 8. 55,80			B.
	(a) B. (w.) XXI. 258...	59,8	13,3	27,3	41,3	55,1	...	...	21. 10. 27,37				26,96			21. 12. 2,12			B.
	B. (w.) XXI. 357...	34,6	48,3	1,8	15,7	29,1	43,2	57,0	21. 14. 15,67				15,25			21. 15. 50,42			B.
	B. (w.) XXI. 357 B.	4,8	18,4	11,1	24,6	...	...	...	21. 14. 15,95				15,33			21. 15. 50,50			B.
	β Aquarii.....	36,2	49,4	3,2	16,3	30,3	43,7	57,2	21. 22. 16,62				16,18	95,18		21. 23. 51,35			B.
	(b) Neptune.....	...	...	...	...	3,6	16,9	30,4	22. 52. 49,77				49,34			22. 54. 24,62			B.
	Neptune B.....	...	...	44,4	57,8	...	...	...	22. 52. 49,87				49,24			22. 54. 24,52			B.
	(c) α Pegasi.....	12,6	26,3	40,2	54,2	8,2	21,8	35,8	22. 55. 54,16				53,50	95,36		22. 57. 28,78			B.
	(d) Polaris.....	31,5	...	...	40,0	30,7	7,8	51,2	1. 5. 41,49				4,87			1. 6. 40,31			B.
Sept. 24	(e) ☉ 1 L.....	...	...	...	10,3	23,8	37,3	50,8	12. 2. 10,31				9,81		1,75	12. 3. 46,19			B.
	γ Aquilæ.....	0,6	14,2	27,7	41,3	55,3	8,8	22,7	19. 37. 41,51				40,88	96,99		19. 39. 17,81			B.
	α Aquilæ.....	21,5	35,0	48,4	1,9	15,7	29,2	42,7	19. 42. 2,05				1,46	96,88		19. 43. 38,40			B.
	H. C. 38240.....	1,4	16,6	31,3	46,2	1,9	16,8	31,6	19. 53. 46,55				46,09			19. 55. 23,04			B.
	(f) H. C. 38240 B...	28,8	43,9	47,4	2,3	...	...	...	19. 53. 46,94				46,28			19. 55. 23,23			B.
	α Capricorni.....	37,8	51,7	5,4	19,1	33,2	46,8	0,8	20. 8. 19,26				18,85	96,97		20. 9. 55,82			B.
	(g) B. (w.) xx. 913...	27,6	41,3	...	9,4	23,8	...	51,4	20. 34. 9,47				9,07			20. 35. 46,07			B.
	B. (w.) xx. 913 B.	57,4	11,4	6,3	19,7	...	...	...	20. 34. 9,95				9,35			20. 35. 46,35			B.
	(h) B. (w.) XXI. 15...	...	...	...	24,1	38,5	52,6	6,4	21. 0. 24,76				24,35			21. 2. 1,38			B.
	B. (w.) XXI. 15 B.	...	...	20,8	34,4	...	...	...	21. 0. 25,60				24,99			21. 2. 2,02			B.
	B. (w.) XXI. 222...	13,6	27,2	41,0	54,8	8,7	22,3	36,2	21. 8. 54,83				54,41			21. 10. 31,45			B.
	(f) B. (w.) XXI. 357...	...	45,8	59,7	14,0	27,8	...	...	21. 14. 13,68				13,26			21. 15. 50,31			B.
	B. (w.) XXI. 357 B.	2,8	16,7	...	...	...	...	...	21. 14. 14,02				13,40			21. 15. 50,45			B.
	β Aquarii.....	34,1	47,9	1,1	14,8	28,6	41,8	55,6	21. 22. 14,84				14,40	96,96		21. 23. 51,46			B.
	B. (w.) XXI. 719...	15,3	29,0	42,6	56,2	10,2	23,7	37,2	21. 28. 56,32				55,89			21. 30. 32,96			B.
	(i) B. (w.) XXI. 828...	24,6	38,2	52,1	5,7	19,8	33,3	47,1	21. 33. 5,83				5,41			21. 34. 42,48			B.
	(k) B. (w.) XXI. 906...	...	27,0	40,7	54,5	8,7	22,2	...	21. 35. 54,63				54,22			21. 37. 31,30			B.
	B.A.C. 7599.....	28,6	42,2	56,1	10,0	24,0	37,7	51,6	21. 40. 10,02				9,60			21. 41. 46,68			B.
	B.A.C. 7648.....	...	26,7	40,3	54,2	8,2	22,1	...	21. 48. 54,31				53,91			21. 50. 31,00			B.
	H. C. 42937.....	3,7	17,2	31,0	44,7	58,3	11,9	25,4	21. 52. 44,60				44,17			21. 54. 21,27			B.
	α Aquarii.....	59,3	12,7	26,2	39,6	53,2	6,5	20,0	21. 56. 39,65				39,15	97,15		21. 58. 16,25			B.
	(l) B. (w.) XXI. 315...	...	47,9	1,3	15,2	28,6	41,8	...	22. 14. 14,97				14,53			22. 15. 51,65			B.
	B. (w.) XXI. 315 B.	5,2	18,6	...	...	...	...	...	22. 14. 15,19				14,55			22. 15. 51,67			B.
	(m) B. (w.) XXI. 415...	22,8	36,3	50,0	4,1	18,0	31,8	45,6	22. 18. 4,09				3,67			22. 19. 40,80			B.
	(n) H. C. 43946.....	49,0	3,0	16,8	30,8	44,9	58,6	12,6	22. 21. 30,81				30,40			22. 23. 7,53			B.
	B. (w.) XXI. 617...	2,6	16,3	30,0	43,9	57,9	11,6	25,2	22. 27. 43,93				43,51			22. 29. 20,65			B.
	H. C. 44506.....	31,8	45,2	58,4	12,0	25,7	39,0	52,4	22. 36. 12,07				11,60			22. 37. 48,75			B.
	Neptune.....	1,2	15,0	28,5	42,1	55,7	9,2	23,0	22. 52. 42,10				41,67			22. 54. 18,84			B.
	α Pegasi.....	10,6	24,4	38,2	52,2	6,2	20,0	34,0	22. 55. 52,23				51,65	97,20		22. 57. 28,82			B.
	(o) Thetis.....	18,3	32,2	46,2	0,0	14,1	27,5	40,9	23. 6. 59,88				59,46			23. 8. 36,65			B.
	Thetis B.....	48,8	2,6	55,8	9,2	...	...	...	23. 7. 0,33				59,71			23. 8. 36,90			B.
Sept. 25	(p) Regulus.....	12,6	26,2	40,0	53,9	7,8	21,4	35,1	9. 58. 53,86			+6,2	53,48	99,11	1,44				B.
Sept. 26	(q) ☉ 1 L.....	38,8	...	...	...	32,8	46,2	59,4	12. 9. 19,15				18,80			12. 10. 58,01			B.
	☉ 2 L.....	...	...	14,0	...	41,2	54,4	8,0	12. 11. 27,53				27,18			12. 13. 6,39			B.
	(r) Polaris SP.....	13,8	...	...	34,0	17,0	58,5	42,5	13. 4. 30,23				1,47			13. 6. 40,74			B.
	(r)(s) Polaris SP. B...	48,5	23,5	...	...	...	...	...											B.
	(r)(t) Polaris SP. B...	41,5	18,0	13,0	...	...	...	...											B.
Sept. 27	Arcturus.....	35,6	49,8	4,2	18,4	32,8	47,1	1,6	14. 7. 18,50				18,12	99,30					B.
	(u) Regulus.....	...	23,2	37,0	...	...	18,7	32,1	9. 58. 50,88				50,50	102,13	1,57				B.
Sept. 30	(x) ☉ 2 L.....	...	21,2	34,7	48,2	1,9	15,2	...	12. 26. 48,25	-11,4	+5,8	+10,2	47,93		1,77	12. 27. 33,41			B.
	α Ophiuchi.....	40,8	54,4	8,0	22,0	36,0	49,7	3,3	17. 27. 22,03				21,65	45,92		17. 28. 7,50			B.
	(y) ζ Aquilæ.....	13,5	27,3	41,2	55,2	9,3	22,6	36,4	18. 57. 55,07				54,67	45,85		18. 58. 40,63			B.
	γ Aquilæ.....	51,3	4,7	18,3	32,0	45,7	59,3	13,0	19. 38. 32,04				31,65	46,13		19. 39. 17,66			B.
	α Aquilæ.....	11,8	25,5	39,2	52,6	6,4	19,8	33,3	19. 42. 52,65				52,28	45,97		19. 43. 38,30			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.  
 Sept. 28, Hardy was put forward 1<sup>m</sup>.

(a) 'A brighter preceding'. (b) The noted times have been corrected by +5°. (c) The counting was found 5<sup>s</sup> slow. (d) Pretty steady. Interruption by the lamp going out. (e) Clouds: 2 L not visible. (f) Faint. (g) 'A brighter following'. (h) Clouded at first and afterwards very faint. (i) 'The south-preceding of two.' (k) 'The north-following of two.' (l) Very faint at first. (m) 'A fainter follows.' (n) 'A brighter precedes.' (o) 'Pretty bright.' The transits at the bars were considered very exact. (p) Steady. (q) Clouds. A violent storm and the clock almost inaudible. (r) Interruption by cumuli passing and loud wind. (s) At the first edges of the bars. (t) At the second edges. (u) Dense cloud and the clock scarcely heard from high wind. (x) The sky overcast. (y) Flaring.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Sept. 30	$\beta$ Aquilæ .....	41,1	54,5	8,0	21,5	35,2	48,6	2,2	19.47.21,58	-11,4	+5,8	+10,2	21,21	46,00	1,77	19.48.7,23			B.
	H. C. 41149.....	24,0	37,7	51,4	5,2	19,3	32,8	46,7	21.5.5,30				5,02			21.5.51,14			B.
	(a) H. C. 41276.....	26,8	41,0	55,2	9,6	24,2	38,2	52,7	21.8.9,68				9,37			21.8.55,49			B.
Oct. 1	B.A.C. 7009.....	45,6	59,2	13,2	27,0	41,3	54,9	9,2	20.14.27,20				26,92		1,80	20.15.14,81			B.
	B.A.C. 7040.....	31,4	46,1	1,1	15,6	30,4	45,2	0,2	20.19.15,72				15,37			20.20.3,27			B.
	(b) B. (w.) xx. 823..	58,6	12,6	26,6	40,6	54,9	8,6	22,3	20.31.40,60				40,33			20.32.28,24			B.
	H. C. 40073.....	44,6	58,7	13,3	27,2	41,9	56,1	10,2	20.37.27,43				27,12			20.38.15,04			B.
	(c) B. (w.) xx. 1106.	42,9	57,2	10,9	24,6	38,7	52,3	....	20.42.24,71				24,42			20.43.12,35			B.
	(d) H. C. 40622.....	23,2	37,9	52,4	7,2	22,2	36,6	51,2	20.52.7,25				6,92			20.52.54,86			B.
	B. (w.) xxi. 239..	50,8	4,7	18,4	32,1	46,2	0,2	13,8	21.10.32,31				32,03			21.11.19,99			B.
	B. (w.) xxi. 357..	21,3	34,9	49,0	2,4	16,7	29,8	43,8	21.15.2,55				2,26			21.15.50,23			B.
	B.A.C. 7456.....	39,8	53,3	7,0	20,9	34,9	48,3	2,2	21.19.20,91				20,63			21.20.8,60			B.
	$\beta$ Aquarii.....	23,2	36,6	50,0	3,5	17,2	30,7	44,2	21.23.3,63				3,33	47,96		21.23.51,31			B.
	B. (w.) xxi. 1038	26,2	40,0	53,7	7,8	22,0	35,6	49,7	21.43.7,86				7,58			21.43.55,58			B.
	B. (w.) xxi. 1038 B.	56,1	9,8	....	....	....	....	....	21.43.8,08				7,60			21.43.55,60			B.
	B. (w.) xxi. 1146.	30,8	44,6	58,6	12,3	26,2	40,0	54,0	21.48.12,36				12,08			21.49.0,09			B.
	B. (w.) xxi. 1228.	9,0	22,6	35,8	49,6	3,3	16,8	30,3	21.51.49,63				49,34			21.52.37,35			B.
	B. (w.) xxi. 1228 B.	39,4	53,1	....	....	....	....	....	21.51.49,91				49,42			21.52.37,43			B.
	$\alpha$ Aquarii.....	48,3	1,6	15,1	28,6	42,0	55,4	9,0	21.57.28,57				28,23	48,02		21.58.16,25			B.
	(e) B. (w.) xxi. 1410.	48,9	2,3	15,9	29,7	43,7	57,2	10,7	22.0.29,78				29,50			22.1.17,52			B.
	B. (w.) xxii. 87..	32,6	46,2	59,8	13,3	27,0	40,5	54,0	22.4.13,34				13,05			22.5.1,08			B.
	B. (w.) xxii. 133.	....	58,7	12,0	25,7	39,2	52,8	....	22.6.25,69				25,40			22.7.13,43			B.
	B. (w.) xxii. 208	17,8	31,7	45,5	59,0	13,2	26,6	40,9	22.9.59,25				58,96			22.10.46,99			B.
	(f) B. (w.) xxii. 208 B.	48,1	1,7	....	....	....	....	....	22.9.59,53				59,04			22.10.47,07			B.
	(g) B. (w.) xxii. 281.	38,8	52,4	5,9	19,4	33,1	46,8	0,1	22.13.19,50				19,22			22.14.7,26			B.
	B. (w.) xxii. 389.	56,7	10,3	24,0	37,8	52,0	5,7	19,2	22.17.37,96				37,67			22.18.25,71			B.
	B. (w.) xxii. 548	49,8	3,3	16,6	30,0	44,0	57,2	10,8	22.25.30,24				29,95			22.26.18,00			B.
	B. (w.) xxii. 630.	38,6	52,2	6,2	20,2	34,1	47,9	1,7	22.29.20,12				19,84			22.30.7,90			B.
	(h) B. (w.) xxii. 695.	....	25,6	38,8	52,6	6,3	19,5	....	22.31.52,57				52,29			22.32.40,35			B.
	H. C. 44423.....	56,3	9,8	23,2	36,8	50,2	3,6	17,2	22.34.36,73				36,42			22.35.24,48			B.
	B. (w.) xxii. 828.	57,6	11,1	24,7	38,2	52,0	5,4	19,0	22.38.38,29				38,00			22.39.26,07			B.
	(i) Neptune.....	11,6	25,2	39,0	52,4	6,2	19,6	33,1	22.52.52,44				52,15			22.53.40,24			B.
	$\alpha$ Pegasi.....	59,4	13,4	27,2	41,2	55,2	9,0	23,0	22.56.41,20				40,81	48,03		22.57.28,90			B.
	$\beta$ Ceti.....	44,6	58,8	13,3	27,3	41,4	55,7	9,8	0.35.27,27				26,97	48,25		0.36.15,19			B.
Oct. 3	$\odot$ 1 L.....	47,0	0,4	13,6	27,4	41,2	54,6	8,0	12.35.27,46				27,15		1,70	12.36.17,96			B.
	$\odot$ 2 L.....	55,7	9,0	22,7	36,0	50,0	3,2	16,9	12.37.36,22				35,91			12.38.26,73			B.
	(k) Polaris SP.....	4,5	49,0	27,0	19,5	1,5	46,5	29,5	13.5.16,79				51,67			13.6.42,52			B.
	(l) Polaris SP. B....	35,0	11,0	8,0	57,0	....	....	....											B.
	(m) Polaris SP. B....	25,0	3,0	2,0	47,0	....	....	....											B.
	Arcturus.....	24,0	38,2	52,3	6,8	21,2	35,4	49,8	14.8.6,82				6,43	50,95		14.8.57,35			B.
	$\gamma$ Aquilæ.....	45,8	59,5	13,1	26,8	40,6	54,1	7,9	19.38.26,83				26,44	51,28		19.39.17,75			B.
	$\alpha$ Aquilæ.....	6,6	20,1	33,7	47,3	1,0	14,6	28,2	19.42.47,36				46,99	51,20		19.43.38,31			B.
	$\alpha^2$ Capricorni....	23,1	37,1	50,8	4,4	18,3	32,2	46,0	20.9.4,56				4,28	51,41		20.9.55,63			B.
	B. (w.) xx. 566..	19,3	33,3	46,6	0,8	14,6	28,6	42,4	20.22.0,80				0,52			20.22.51,88			B.
	B. (w.) xx. 664..	1,3	15,7	29,6	43,2	57,6	11,1	25,0	20.25.43,36				43,08			20.26.34,45			B.
	B. (w.) xx. 823..	55,1	9,0	23,1	37,0	51,3	5,2	19,2	20.31.37,13				36,86			20.32.28,24			B.
	(n) B. (w.) xx. 973..	39,0	52,5	6,4	20,2	34,5	48,2	1,9	20.37.20,38				20,09			20.38.11,47			B.
	H. C. 40235.....	40,2	54,4	8,4	22,6	37,0	51,0	5,3	20.42.22,70				22,40			20.43.13,79			B.
	H. C. 40391.....	59,0	13,3	27,2	41,2	55,7	9,6	23,8	20.46.41,40				41,10			20.47.32,49			B.
	H. C. 40622.....	19,9	34,6	48,9	3,7	18,7	33,1	48,0	20.52.3,84				3,51			20.52.54,91			B.
	(o) B. (w.) xxi. 357.	18,4	31,6	45,3	59,1	13,2	26,7	40,4	21.14.59,25				58,96			21.15.50,39			B.
	B.A.C. 7456.....	36,0	49,9	3,6	17,3	31,4	45,0	58,8	21.19.17,43				17,15			21.20.8,58			B.
	$\beta$ Aquarii.....	19,5	33,1	46,5	0,2	13,9	27,0	40,9	21.23.0,15				59,85	51,41		21.23.51,29			B.
	H. C. 41984.....	47,7	2,0	16,2	30,2	45,0	59,0	13,2	21.26.30,47				30,15			21.27.21,59			B.
	(h) B. (w.) xxi. 742.	....	0,6	14,2	27,8	41,8	55,3	....	21.30.27,95				27,66			21.31.19,10			B.
	B. (w.) xxi. 828.	9,9	23,6	37,2	51,1	5,2	18,7	32,6	21.33.51,18				50,89			21.34.42,34			B.
	(g) B. (w.) xxi. 906.	58,3	12,1	26,2	40,0	53,9	7,8	21,6	21.36.39,98				39,69			21.37.31,14			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) 'One of less N.P.D. by 5' preceded about 10°.' (b) 'Others preceding.' (c) Cloudy. The noted times were 1<sup>m</sup> greater. (d) 'A very faint star preceded 10°.' (e) 'One very faint preceding.' (f) 'One of Mag. 12 preceded 4°.' (g) 'A brighter south-preceding.' (h) Very faint. (i) 'Decidedly bluish.' (j) 'Unsteady at times.' (l) At the first edges of the bars. (m) At the second edges. (n) 'One of Mag. 9.10 followed about 15°,' viz. B. (w.) xx. 986. (o) 'Another north-following.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				s.	s.	s.	
Oct. 3	(a) B. (w.) XXI. 965..	34,6	48,8	....	15,6	30,2	43,8	58,0	21.39.16,19	-11,4	+5,8	+10,2	15,91		1,70	21.40.7,36		B.	
	B.A.C. 7608.....	0,1	14,2	28,6	42,6	57,2	11,5	25,8	21.42.42,86				42,54			21.43.34,00		B.	
	B.A.C. 7640.....	16,6	30,2	44,2	58,1	12,4	26,2	40,2	21.48.58,28				58,01			21.49.49,48		B.	
	B. (w.) XXI. 1228	..	18,7	32,8	46,2	0,0	13,3	....	21.51.46,21				45,92			21.52.37,39		B.	
	α Aquarii.....	44,8	58,2	11,6	24,8	38,7	51,9	5,3	21.57.25,04				24,70	51,53		21.58.16,18		B.	
	(b) B. (w.) XXI. 1410	45,2	58,6	12,2	25,9	40,0	53,7	7,3	22.0.26,13				25,85			22.1.17,33		B.	
	B. (w.) XXII. 192.	16,9	30,6	44,1	57,8	12,2	25,6	39,6	22.8.58,12				57,83			22.9.49,32		B.	
	B. (w.) XXII. 281.	35,5	49,0	2,4	16,0	29,8	43,2	56,7	22.13.16,09				15,80			22.14.7,30		B.	
	(c) * N.P.D. 98°. 11'	....	46,1	59,7	13,2	27,1	40,3	....	22.51.13,29				13,00			22.52.4,54		B.	
	Neptune.....	57,8	11,2	25,0	38,4	52,2	5,7	19,2	22.52.38,50				38,21			22.53.29,75		B.	
	α Pegasi.....	56,1	9,8	23,6	37,5	51,7	5,4	19,4	22.56.37,64				37,25	51,58		22.57.28,80		B.	
	α Andromedæ...	13,4	28,7	43,8	59,0	14,6	29,6	45,0	23.59.59,16				58,74	51,63		0.0.50,36		B.	
	(d) Polaris.....	9,5	56,5	39,0	21,0	11,8	50,0	39,0	1.6.23,83				50,97			1.6.42,67		B.	
Oct. 5	(e) Neptune.....	44,0	57,6	11,0	24,6	38,3	52,0	5,6	22.52.24,73				24,44		1,72	22.53.19,33		B.	
	α Pegasi.....	52,6	6,4	20,2	34,1	48,2	2,0	15,8	22.56.34,19				33,80	55,02		22.57.28,69		B.	
	α Andromedæ...	10,2	25,3	40,6	55,7	11,1	26,3	41,8	23.59.55,86				55,44	54,93		0.0.50,41		B.	
	β Ceti.....	38,0	52,0	6,3	20,6	35,0	49,0	3,4	0.35.20,61				20,31	54,93		0.36.15,32		B.	
Oct. 7	α Capricorni....	16,2	30,2	43,8	57,6	11,7	25,2	39,0	20.8.57,67				57,39	58,24	1,77	20.9.55,63		B.	
	(b)(f) H. C. 40744....	....	....	33,5	48,0	2,2	16,3	30,3	20.54.47,87				47,57			20.55.45,86		B.	
	H. C. 40941....	20,1	34,4	48,2	....	16,1	30,4	44,7	21.0.2,31				2,02			21.1.0,32		B.	
	H. C. 40941 B....	49,8	4,0	....	....	....	....	....	21.0.2,72				2,23			21.1.0,53		B.	
	33 Capricorni...	10,0	24,2	39,0	53,2	8,0	22,1	36,7	21.14.53,31				52,98			21.15.51,30		B.	
	B. (w.) XXI. 422.	53,1	6,4	20,2	34,0	47,9	1,7	15,2	21.17.34,07				33,79			21.18.32,11		B.	
	B.A.C. 7463.....	5,7	20,0	34,0	48,3	2,7	17,1	31,3	21.20.48,45				48,14			21.21.46,47		B.	
	β Aquarii.....	12,4	26,0	39,5	53,2	6,8	20,2	33,7	21.22.53,11				52,81	58,41		21.23.51,14		B.	
	ε Capricorni....	12,0	26,2	40,4	54,9	9,3	23,4	38,0	21.27.54,89				54,58			21.28.52,91		B.	
	B.A.C. 7599.....	6,8	20,6	34,4	48,2	2,2	16,0	29,8	21.40.48,29				48,00			21.41.46,35		B.	
	(g) B. (w.) XXI. 1064	21,1	....	47,9	2,4	16,4	29,9	43,7	21.44.2,28				2,00			21.45.0,35		B.	
	B.A.C. 7640.....	9,3	23,0	37,1	51,2	5,3	19,1	33,2	21.48.51,17				50,90			21.49.49,26		B.	
	α Aquarii.....	38,0	51,2	4,8	18,2	31,8	45,1	58,6	21.57.18,25				17,91	58,29		21.58.16,28		B.	
Oct. 10	(h) Polaris SP.....	52,0	41,0	20,5	....	....	....	....	13.5.8,44		+6,6	+10,2	41,71		1,77	13.6.46,94		B.	
	Polaris SP. B....	....	3,4	....	....	....	....	....										B.	
	(i) Polaris SP. B....	....	52,5	....	....	....	....	....										B.	
Oct. 12	(k)(l) ⊙ 1 L.....	29,2	42,7	56,2	9,9	23,8	37,0	50,8	13.8.9,80				9,53			13.9.16,53		B.	
	⊙ 2 L.....	39,0	52,7	6,0	19,7	33,3	47,0	0,7	13.10.19,78				19,51			13.11.26,51		B.	
Oct. 13	⊙ 1 L.....	9,1	23,0	36,3	50,1	4,0	17,4	31,0	13.11.50,12				49,86			13.12.58,64		B.	
	⊙ 2 L.....	19,4	33,0	46,4	0,2	14,0	27,3	41,0	13.14.0,18				59,92			13.15.8,70		B.	
	(m) Arcturus.....	....	20,2	34,4	48,8	3,3	17,6	31,8	14.7.48,87				48,52	68,84				B.	
Oct. 14	(l) ⊙ 1 L.....	50,1	3,7	17,2	30,9	44,7	57,8	11,8	13.15.30,88				30,62			13.16.41,17		B.	
	⊙ 2 L.....	0,3	13,8	27,3	41,0	54,9	8,4	22,1	13.17.41,11				40,85			13.18.51,40		B.	
Oct. 15	(l) ⊙ 1 L.....	31,2	44,9	58,6	12,2	26,0	39,3	53,0	13.19.12,17		+5,9		11,88		1,67	13.20.24,14		B.	
	⊙ 2 L.....	41,8	55,2	8,9	22,6	36,3	50,0	3,4	13.21.22,60				22,31			13.22.34,57		B.	
Oct. 17	(n) Polaris SP.....	36,5	24,8	3,5	56,5	41,5	24,8	....	13.4.53,64				28,32		1,64	13.6.45,56		B.	
	(o) Polaris SP. B....	6,5	46,0	45,5	33,5	....	....	....										B.	
	(p) Polaris SP. B....	56,5	36,5	37,0	24,0	....	....	....										B.	
Oct. 18	⊙ 1 L.....	38,6	52,4	6,0	19,8	33,6	47,0	0,9	13.30.19,76				19,47			13.31.36,74		B.	
	⊙ 2 L.....	50,0	3,1	17,0	30,9	44,6	58,0	11,7	13.32.30,75				30,46			13.33.47,73		B.	
	Arcturus.....	57,2	11,8	26,0	40,1	54,8	9,1	23,2	14.7.40,31				39,92	77,44		14.8.57,23		B.	
	β Lyrae.....	34,4	50,5	6,4	22,5	39,0	54,7	10,8	18.43.22,61				22,16	77,56		18.44.39,78		B.	
	ζ Aquilæ.....	41,5	55,2	9,1	22,9	37,0	50,7	4,4	18.57.22,97				22,58	77,62		18.58.40,22		B.	

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Through misty cloud. 'A fainter precedes.' (b) Very faint. (c) 'Of greater N.P.D. than Neptune.' (d) Unsteady at wire VII. Sudden fall of temperature: at midnight the exterior thermometer was at 34°. (e) Faint from mist. The sky was clearing after heavy rain. (f) Cloudy, and fog towards the South. (g) Faint at times. (h) Very steady. Quite overcast after the transit at wire III. (i) At the first and second edges of bar II. (k) Through cloud. Wire IV of I L was written down 8,9 and is altered conjecturally. (l) No clock-stars could be observed. (m) Cloud. (n) Very steady. (o) At the first edge. (p) At the second edges.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.					
Oct. 18	$\gamma$ Aquilæ.....	19,2	32,7	46,3	0,0	14,0	27,4	41,0	19.38.0,08	-11,4	+5,9	+10,2	59,69	77,78	1,64	19.39.17,37	B.
	$\beta$ Aquilæ.....	8,9	22,6	36,1	49,6	3,3	16,7	30,2	19.46.49,63				49,26	77,65		19.48.6,95	B.
	$\alpha^2$ Capricorni.....	56,6	10,6	24,1	38,0	52,0	5,5	19,4	20.8.38,03				37,76	77,70		20.9.55,48	B.
	(a) B.A.C. 7102.....	57,1	11,3	25,6	40,0	54,6	9,0	23,4	20.26.40,14				39,82			20.27.57,56	B.
	B. (w.) xx. 790..	5,6	19,4	33,3	47,2	1,3	15,3	29,2	20.29.47,33				47,06			20.31.4,80	B.
	(b) B. (w.) xx. 950..	12,6	26,3	40,2	54,2	8,6	22,1	36,2	20.35.54,31				54,04			20.37.11,79	B.
	H. C. 40159.....	1,3	15,2	29,0	43,0	56,9	10,3	24,4	20.39.42,87				42,58			20.41.0,33	B.
	H. C. 40311.....	11,0	25,2	39,6	53,8	8,2	22,1	36,8	20.43.53,81				53,50			20.45.11,26	B.
	(c) B. (w.) xx. 1394..	39,2	....	7,0	20,9	34,7	....	20,53.6,99				6,71			20.54.24,48	B.	
	(d) $\beta$ Aquarii.....	6,6	20,2	33,6	47,3	0,7	14,3	21.22.33,69				33,39	77,69		21.23.51,19	B.	
	B. (w.) xxi. 828..	43,1	56,8	10,4	24,4	38,4	52,1	5,9	21.33.24,44				24,16			21.34.41,98	B.
	(e) B. (w.) xxi. 911..	48,0	2,2	15,9	30,0	44,4	58,2	12,1	21.36.30,11				29,84			21.37.47,66	B.
	B. (w.) xxi. 1146.	0,7	14,4	28,2	42,2	56,2	10,0	24,2	21.47.42,27				41,99			21.48.59,82	B.
	(c) B. (w.) xxi. 1228	38,8	52,7	6,4	19,6	33,6	46,9	0,3	21.51.19,76				19,47			21.52.37,31	B.
	B.A.C. 7704.....	3,3	16,8	30,2	43,9	57,6	11,0	24,6	21.58.43,91				43,62			22.0.1,46	B.
	B. (w.) xxii. 87..	2,7	16,2	29,7	43,2	57,2	10,4	24,0	22.3.43,34				43,05			22.5.0,90	B.
	(f) B. (w.) xxii. 167	41,3	55,1	8,9	22,4	36,5	50,2	3,7	22.7.22,58				22,30			22.8.40,15	B.
	B. (w.) xxii. 231.	53,1	6,8	20,6	34,2	48,1	1,4	15,2	22.10.34,20				33,92			22.11.51,78	B.
(g) Neptune.....	22,0	35,3	49,1	2,7	16,4	29,7	43,6	22.51.2,68				2,39			22.52.20,29	B.	
(h) $\alpha$ Pegasi.....	29,6	43,5	57,3	11,3	25,2	39,0	52,8	22.56.11,24				10,85	77,89		22.57.28,76	B.	
Oct. 20	$\odot$ 1 L.....	7,3	20,8	34,4	48,1	2,0	15,7	29,2	13.37.48,22				47,93		1,73	13.39.8,41	B.
	$\odot$ 2 L.....	18,4	32,0	45,8	59,5	13,4	27,0	40,6	13.39.59,53				59,24			13.41.19,72	B.
	(i) Arcturus.....	54,2	8,8	22,8	37,0	51,7	5,8	....	14.7.37,21				36,82	80,55		14.8.57,34	B.
	$\alpha$ Coronæ.....	22,1	37,1	52,3	7,6	23,0	37,8	53,0	15.27.7,56				7,15	80,61		15.28.27,77	B.
	(k) $\alpha$ Serpentis.....	....	14,6	28,2	....	....	8,6	22,1	15.35.41,63				41,26	80,74		15.37.1,89	B.
	$\gamma$ Aquilæ.....	....	29,8	43,1	57,0	10,8	24,2	....	19.37.56,99				56,60	80,84		19.39.17,52	B.
	$\alpha$ Aquilæ.....	36,7	50,2	3,8	17,3	31,2	44,5	58,2	19.42.17,42				17,05	80,86		19.43.37,97	B.
	$\beta$ Aquilæ.....	5,8	19,1	32,8	46,2	0,0	13,3	26,8	19.46.46,29				45,92	80,96		19.48.6,85	B.
	(l) B. (w.) xx. 790..	2,1	16,0	30,0	43,8	58,2	11,8	25,9	20.29.43,97				43,69			20.31.4,67	B.
	B. (w.) xx. 913..	43,1	....	11,7	....	....	52,8	6,6	20.34.25,07				24,80			20.35.45,79	B.
	(m) B. (w.) xx. 913 B	....	....	21,3	35,2	....	....	....	20.34.25,34				24,87			20.35.45,86	B.
	H. C. 40159.....	58,2	12,1	25,9	39,3	53,5	7,0	21,1	20.39.39,59				39,30			20.41.0,29	B.
	H. C. 40311.....	7,7	21,8	36,1	50,2	4,9	19,2	33,2	20.43.50,44				50,13			20.45.11,13	B.
	B. (w.) xx. 1275.	55,8	....	....	37,4	....	5,5	19,3	20.48.37,58				37,30			20.49.58,30	B.
	(m) B. (w.) xx. 1275 B	26,1	39,9	33,9	47,4	....	....	....	20.48.38,06				37,58			20.49.58,58	B.
	(n) Neptune.....	10,8	24,3	38,2	51,6	5,2	18,6	32,2	22.50.51,55				51,26			22.52.12,41	B.
	(o) $\alpha$ Pegasi.....	26,3	40,3	54,2	7,9	22,1	35,6	49,7	22.56.8,02				7,63	81,09		22.57.28,78	B.
	(p) Metis.....	56,7	10,1	23,0	36,8	50,5	3,8	17,3	0.57.36,89				56,58			0.58.57,88	B.
	Polaris.....	42,5	29,5	....	54,0	46,5	25,0	14,5	1.5.57,48				24,83			1.6.46,14	B.
	Polaris B.....	8,0	....	....	....	....	....	....	....				....			....	B.
	(q) Polaris B.....	54,5	....	....	....	....	....	....	....				....			....	B.
	$\alpha$ Arietis.....	52,0	6,3	21,0	35,6	50,3	4,6	19,4	1.57.35,60				35,22	81,40		1.58.56,59	B.
	(m)(r) Astræa.....	....	....	19,7	....	....	58,7	12,2	2.17.32,23				31,87			2.18.53,27	B.
	Astræa B.....	....	....	26,1	39,1	....	....	....	2.17.31,76				31,20			2.18.52,60	B.
Oct. 21	(s) Polaris SP.....	....	20,8	....	52,5	36,5	....	5,0	13.4.49,74				22,81		1,90	13.6.46,88	B.
	(s) Polaris SP. B....	10,0	42,0	46,0	....	....	....	....	....				....			....	B.
	(s) Polaris SP. B....	0,5	34,0	38,5	30,0	....	....	....	....				....			....	B.
Oct. 22	$\odot$ 1 L.....	....	....	....	18,3	32,2	46,0	0,0	13.45.18,49				18,23			13.46.42,35	B.
	$\odot$ 2 L.....	....	3,0	16,6	30,2	44,1	58,0	11,6	13.47.30,38				30,12			13.48.54,24	B.
	Arcturus.....	50,8	5,0	19,0	33,6	48,0	2,1	16,6	14.7.33,58				33,24	84,14		14.8.57,39	B.
	$\alpha$ Coronæ.....	18,7	33,8	48,7	3,9	19,1	34,1	49,2	15.27.3,93				3,58	84,17		15.28.27,83	B.
	(u) $\alpha$ Serpentis.....	57,2	11,0	24,4	38,0	51,8	5,2	18,8	15.35.38,06				37,73	84,27		15.37.2,00	B.
	$\beta$ Aquilæ.....	2,0	15,5	28,9	42,5	56,2	9,7	23,1	19.46.42,55				42,21	84,64		19.48.6,81	B.
	H. C. 40159.....	54,7	8,2	22,1	35,9	50,0	3,3	17,2	20.39.35,92				35,66			20.41.0,33	B.
	H. C. 40330.....	38,1	52,3	6,6	20,8	35,3	49,5	3,6	20.44.20,88				20,59			20.45.45,26	B.
	H. C. 40744.....	38,8	52,8	6,8	21,1	35,7	49,6	3,8	20.54.21,22				20,93			20.55.45,62	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^{\circ}349$ ,  $-26^{\circ}905$ ,  $-13^{\circ}633$ ,  $+0^{\circ}010$ ,  $+13^{\circ}656$ ,  $+26^{\circ}895$ ,  $+40^{\circ}327$ .

(a) Faint at times from fog. (b) 'Three preceding.' (c) Cloudy. The noted times were 1<sup>m</sup> later. (d) Almost invisible at last from cloud.  
 (e) Very faint and observed doubtfully. The observations this evening were much interrupted by clouds. (f) 'The preceding and fainter of two.' (g) Faint from fog and cloud. (h) Blazing. (i) Through cloud. (k) Very faint: clouds passing. (l) 'One southward and another following.'  
 (m) Very faint. (n) Faint from cloud. (o) Misty cloud over the sky. (p) 'Bright.' (q) At the first and second edges of bar I.  
 (r) Misty sky: halo about the Moon. (s) Clouds passing. At the first and second edges of the bars. (t) The screen and shutters shaken by high wind, and beat of clock scarcely audible. Wires II and III of 2 L have each been increased by 2". (u) Excessively faint from day-light.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Oct. 22	B. (w.) xx. 1501.	59,1	12,8	26,6	40,6	54,5	8,1	22,1	20.57.40,54	-11,4	+6,7	+10,2	40,28		1,90	20.59.4,97			B.
	(a) B. (w.) xxi. 43..	28,2	41,4	55,8	9,7	23,5	37,0	51,2	21.2.9,55				9,30			21.3.34,00			B.
	(b) B. (w.) xxi. 258..	55,8	9,6	23,3	37,2	51,2	4,8	18,8	21.10.37,24				36,98			21.12.1,69			B.
	B. (w.) xxi. 423..	26,6	40,4	54,0	8,0	21,8	35,8	50,0	21.17.8,09				7,83			21.18.32,55			B.
	(c) B. (w.) xxi. 423 B	56,9	10,4	4,1	17,2	....	....	....	21.17.8,38				7,92			21.18.32,64			B.
	β Aquarii.....	46,2	59,6	12,9	26,5	40,2	53,6	7,2	21.22.26,60				26,33	84,69		21.23.51,06			B.
	H. C. 41984.....	14,2	28,4	42,3	56,8	11,3	25,4	39,8	21.25.56,89				56,60			21.27.21,33			B.
	B. (w.) xxi. 719.	27,3	40,8	54,2	8,1	21,8	35,4	49,1	21.29.8,10				7,84			21.30.32,57			B.
	42 Capricorni....	29,1	42,8	56,7	10,6	24,8	38,6	52,5	21.32.10,72				10,46			21.33.35,20			B.
	B. (w.) xxi. 906.	25,0	38,8	52,6	6,2	20,6	34,2	48,3	21.36.6,53				6,27			21.37.31,01			B.
	(c) B. (w.) xxi. 965.	....	15,7	29,1	42,8	56,7	10,2	....	21.38.42,91				42,66			21.40.7,41			B.
	B. (w.) xxi. 1038.	49,2	3,0	16,8	30,3	45,1	58,3	12,4	21.42.30,72				30,46			21.43.55,21			B.
	(d) B. (w.) xxi. 1174	7,5	21,4	35,4	49,3	3,6	17,3	31,2	21.48.49,39				49,14			21.50.13,90			B.
	B. (w.) xxi. 1249	25,0	38,8	52,8	6,6	20,8	34,4	48,6	21.52.6,72				6,47			21.53.31,23			B.
	B. (w.) xxi. 1309	26,5	40,2	54,0	8,0	22,2	36,0	50,0	21.55.8,13				7,88			21.56.32,65			B.
	α Aquarii.....	....	38,1	51,3	5,2	18,3	31,8	....	21.56.51,49				51,18	84,85		21.58.15,95			B.
	H. C. 43188.....	46,8	0,7	14,7	28,5	42,8	56,5	10,4	22.0.28,63				28,38			22.1.53,16			B.
	(e) B. (w.) xxii. 87..	55,7	9,2	22,8	36,1	50,0	3,2	16,9	22.3.36,27				36,00			22.5.0,78			B.
	(f) B. (w.) xxii. 167.	34,4	48,2	2,0	15,6	29,6	43,2	57,0	22.7.15,71				15,46			22.8.40,25			B.
	B. (w.) xxii. 389.	19,6	33,3	47,0	0,8	15,0	28,5	42,2	22.17.0,91				0,65			22.18.25,45			B.
	(g) B. (w.) xxii. 459.	49,8	....	17,2	31,2	45,0	58,8	12,3	22.20.31,13				30,88			22.21.55,68			B.
	B. (w.) xxii. 547.	12,4	26,2	40,0	53,8	7,2	21,7	35,4	22.24.53,81				53,55			22.26.18,36			B.
	B. (w.) xxii. 630.	1,6	15,5	29,2	43,1	57,2	10,6	24,6	22.28.43,11				42,85			22.30.7,66			B.
	B. (w.) xxii. 752.	13,6	27,2	41,0	54,2	8,2	21,8	35,4	22.33.54,49				54,23			22.35.19,05			B.
	B. (w.) xxii. 828.	20,4	34,0	47,6	1,3	15,1	28,6	42,1	22.38.1,30				1,04			22.39.25,86			B.
	72 Aquarii.....	3,7	17,1	30,7	44,1	58,0	11,3	25,0	22.41.44,27				44,01			22.43.8,84			B.
	B. (w.) xxii. 962.	56,6	10,2	23,6	37,2	51,0	4,2	18,0	22.44.37,26				36,99			22.46.1,82			B.
	(h) B.A.C. 7993.....	37,8	51,1	4,8	18,1	32,0	45,2	59,0	22.48.18,29				18,03			22.49.42,87			B.
	(i) Neptune.....	59,6	13,2	26,8	40,2	54,2	7,7	....	22.50.40,42				40,17			22.52.5,01			B.
Oct. 24	(k) ☉ 2 L.....	22,7	36,4	50,0	4,0	17,6	31,6	45,3	13.55.3,94			+9,0	3,61		1,82	13.56.31,66			B.
	(l) Arcturus.....	47,0	1,0	15,3	29,6	44,1	58,3	12,7	14.7.29,72				29,33	88,06					B.
Oct. 25	(m) H. C. 40488.....	....	49,1	3,3	17,7	32,3	46,1	....	20.48.17,71				17,32		1,76	20.49.47,62			B.
	H. C. 40622.....	....	55,2	10,0	24,6	39,6	54,2	....	20.51.24,73				24,32			20.52.54,62			B.
	(n) B.A.C. 7325.....	8,0	22,2	36,6	50,8	5,6	19,6	34,0	20.56.50,97				50,59			20.58.20,90			B.
	B. (w.) xxi. 54..	48,6	1,8	15,7	29,5	43,6	57,2	11,2	21.2.29,66				29,33			21.3.59,64			B.
	(o) B.A.C. 7378.....	8,6	22,9	37,2	51,6	6,2	20,3	34,8	21.6.51,65				51,27			21.8.21,59			B.
	(o)(p) 33 Capricorni..	38,2	52,3	6,6	21,0	35,9	50,2	4,6	21.14.21,25				20,86			21.15.51,19			B.
	B.A.C. 7456.....	57,1	10,8	24,5	38,3	52,1	6,0	19,8	21.18.38,37				38,03			21.20.8,37			B.
	β Aquarii.....	40,5	54,0	7,4	20,9	34,7	48,0	1,7	21.22.21,03				20,69	90,29		21.23.51,03			B.
	H. C. 41984.....	8,6	23,0	37,1	51,3	5,7	19,8	34,2	21.25.51,38				51,01			21.27.21,35			B.
	(q) B. (w.) xxi. 748..	....	35,8	49,0	2,9	16,6	30,2	....	21.30.2,91				2,58			21.31.32,93			B.
	B. (w.) xxi. 828..	30,9	44,6	58,2	12,0	26,0	39,5	53,6	21.33.12,11				11,78			21.34.42,13			B.
	B. (w.) xxi. 940..	47,2	0,8	14,2	27,7	41,6	55,1	8,7	21.37.27,90				27,57			21.38.57,93			B.
	B.A.C. 7599.....	34,8	48,6	2,4	16,2	30,2	43,8	57,7	21.40.16,24				15,91			21.41.46,27			B.
	α Aquarii.....	5,6	19,0	32,3	45,8	59,5	12,7	26,2	21.56.45,87				45,50	90,50		21.58.15,88			B.
	(r) B. (w.) xxii. 255.	46,1	59,6	13,5	27,4	41,3	55,2	9,1	22.11.27,46				27,13			22.12.57,53			B.
	B. (w.) xxii. 345.	33,2	46,8	0,5	14,1	28,0	41,5	55,2	22.15.14,19				13,86			22.16.44,26			B.
	B. (w.) xxii. 417	32,6	46,0	59,6	13,1	26,8	40,2	54,0	22.18.13,18				12,84			22.19.43,25			B.
	56 Aquarii.....	....	28,8	42,6	56,7	10,8	24,4	....	22.20.56,67				56,34			22.22.26,75			B.
	B. (w.) xxii. 547.	6,9	20,8	34,6	48,4	2,3	15,8	29,8	22.24.48,37				48,03			22.26.18,45			B.
	Neptune.....	43,8	57,3	11,0	24,5	38,3	51,7	5,3	22.50.24,56				24,24			22.51.54,69			B.
	(s) B. (w.) xxiii. 263	58,4	12,1	25,5	39,3	53,0	6,2	19,7	23.11.39,17				38,83			23.13.9,30			B.
	B. (w.) xxiii. 327	16,6	30,1	43,3	57,0	10,6	23,8	37,4	23.14.56,97				56,60			23.16.27,08			B.
	B. (w.) xxiii. 411	32,9	46,1	59,8	13,4	27,2	40,6	54,1	23.19.13,44				13,10			23.20.43,58			B.
	(t) B. (w.) xxiii. 530	....	14,2	27,4	40,8	....	7,9	21,5	23.24.41,01				40,66			23.26.11,15			B.
	α Andromedæ...	34,4	49,6	5,2	20,3	35,7	50,8	6,1	23.59.20,30				19,90	90,43		0.0.50,43			B.
	(u) β Ceti.....	2,4	....	30,8	45,2	59,2	13,3	27,7	0.34.45,03				44,67	90,60		0.36.15,25			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) 'A very faint one preceding, and another of equal magnitude following about 25s.' (b) 'A fainter of the same R.A. northward.' (c) Very faint.  
 (d) 'The following of two.' (e) 'A very faint star preceding.' (f) The noted times have been diminished by 1m. (g) Faint at times. 'The preceding of two.'  
 (h) Clouds passing. The minutes were not recorded. (i) Cloudy. (k) Very faint: almost hid by cloud. (l) Faint from cloud.  
 (m) Faint. (n) Dancing. (o) The sky very clear, but stars unsteady. (p) Blazing. (q) 'Two faint stars preceded.' (r) 'Two of Mag. 11 preceding, and one following.' (s) 'One preceding.' (t) Faint at times: observed by mistake for B. (w.) xxiii. 555. (u) Very faint from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"					
Oct. 25	Metis . . . . .	22,6	36,0	49,7	2,8	16,4	29,7	43,2	0.53. 2,91	-11,4	+6,7	+9,0	2,56		1,76	0.54.33,16	B.
	(a) Polaris . . . . .	25,5	12,5	53,5	35,5	31,5	....	....	1. 5. 40,76				11,64			1. 6. 42,25	B.
	Astræa . . . . .	15,3	29,6	42,9	56,3	9,7	23,8	36,7	2.12.56,33				55,95			2.14.26,65	B.
	(b) Astræa B. . . . .	46,3	59,7	50,7	3,8	....	....	....	2.12.56,32				55,74			2.14.26,44	B.
	α Ceti. . . . .	28,2	41,4	54,8	8,3	21,8	35,3	48,8	2.53. 8,37				7,98	90,75		2.54.38,72	B.
	(c) Polaris SP. . . . .	....	....	....	....	25,0	9,0	56,0	13. 4.39,35				10,45			13. 6.41,94	B.
	Polaris SP. B. . . . .	....	....	....	36,0	....	....	....									B.
	(d) Polaris SP. B. . . . .	....	....	....	28,5	....	....	....									B.
Oct. 26	(e) ☉ I L. . . . .	46,5	0,0	13,8	....	....	....	....	14. 0.27,74				27,40			14. 1.58,96	B.
Oct. 28	(f) B. (w.) XXIII. 579	59,2	12,6	26,2	39,3	53,2	6,6	20,2	23.26.39,62		+5,7	+8,1	39,21		1,84	23.28.15,07	B.
	B. (w.) XXIII. 682	56,1	9,4	22,8	36,3	49,9	3,2	16,6	23.31.36,33				35,87			23.33.11,74	B.
	B. (w.) XXIII. 751	33,4	46,7	0,1	13,7	27,4	40,6	54,2	23.35.13,73				13,27			23.36.49,14	B.
	22 Piscium. . . . .	13,2	26,4	40,0	53,4	7,1	20,2	33,8	23.42.53,44				52,98			23.44.28,86	B.
	(g) B. (w.) XXIII. 977	37,7	50,8	4,2	17,3	31,3	44,6	58,1	23.46.17,72				17,28			23.47.53,16	B.
	B. (w.) XXIII. 1066	52,1	5,6	18,9	32,6	46,2	59,6	13,0	23.50.32,57				32,11			23.52. 8,00	B.
	B. (w.) XXIII. 1144	2,0	15,3	28,8	42,2	56,0	9,2	22,9	23.53.42,34				41,92			23.55.17,81	B.
	α Andromedæ . . .	29,2	44,4	59,6	14,8	30,4	45,5	0,9	23.59.14,97				14,48	95,84		0. 0.50,38	B.
	Polaris. . . . .	18,5	5,5	48,5	33,5	24,3	4,5	54,0	1. 5.35,54				5,70			1. 6.41,69	B.
	(d) Polaris B. . . . .	1,5	49,0	....	....	....	....	....									B.
	Polaris B. . . . .	50,5	35,5	....	....	....	....	....									B.
	β Ceti. . . . .	....	....	25,5	39,6	54,2	8,2	22,3	0.34.39,76				39,31	95,96		0.36.15,26	B.
	(h) Metis. . . . .	50,6	4,2	17,8	31,5	45,2	58,2	11,8	0.50.31,23				30,90			0.52. 6,87	B.
	(i) α Arietis. . . . .	37,4	51,8	6,3	21,2	35,7	50,2	4,8	1.57.21,05				20,58	96,11		1.58.56,63	B.
	(k) Astræa . . . . .	58,2	....	1,8	15,3	....	....	....	2.10. 7,86				7,11			2.11.43,18	B.
Oct. 30	(l) Polaris SP. . . . .	11,5	0,5	39,5	32,5	15,6	0,0	45,5	13. 4.29,30				0,93		1,81	13. 6.41,65	B.
	Polaris SP. B. . . . .	....	....	23,0	26,5	....	....	....									B.
	(d) Polaris SP. B. . . . .	....	....	13,5	18,0	....	....	....									B.
	(m) Arcturus. . . . .	34,2	48,6	2,7	16,9	31,6	45,8	0,2	14. 7.17,15				16,67	100,76			B.
Oct. 31	☉ I L. . . . .	0,3	14,2	27,8	41,9	55,9	9,7	23,7	14.19.41,93				41,51			14.21.22,32	B.
	☉ 2 L. . . . .	13,8	27,8	41,6	55,4	9,4	23,3	37,3	14.21.55,51				55,09			14.23.35,91	B.
	(n) H. C. 43719. . . . .	32,3	46,2	59,9	14,2	28,0	41,7	55,4	22.15.13,96				13,54			22.16.54,95	B.
	B. (w.) XXII. 520. . . . .	38,2	51,8	5,2	18,6	32,3	45,6	59,2	22.23.18,70				18,29			22.24.59,71	B.
	B. (w.) XXII. 589. . . . .	51,0	4,3	18,0	31,5	45,2	58,6	12,3	22.26.31,55				31,14			22.28.12,56	B.
	(o) B.A.C. 7892 sf. . . . .	24,2	37,9	51,6	5,3	19,3	33,2	47,2	22.30. 5,53				5,11			22.31.46,54	B.
	(p) B. (w.) XXII. 748	53,0	6,8	20,3	34,2	48,2	1,7	15,8	22.33.34,29				33,87			22.35.15,30	B.
	B. (w.) XXII. 933. . . . .	41,4	55,2	8,8	22,4	36,2	49,8	3,8	22.43.22,51				22,11			22.45. 3,56	B.
	Neptune. . . . .	15,2	28,6	42,2	55,6	9,6	23,0	36,5	22.49.55,81				55,39			22.51.36,84	B.
	B. (w.) XXIII. 457	29,7	43,3	56,6	....	23,4	....	50,4	23.21.10,04				9,60			23.22.51,09	B.
	(q)(r) B. (w.) XXIII. 457B	3,3	16,8	4,4	17,7	....	....	....	23.21.10,35				9,71			23.22.51,20	B.
	(g) B. (w.) XXIII. 579	53,3	6,8	20,3	33,8	47,4	0,6	13,8	23.26.33,71				33,30			23.28.14,80	B.
	(s)(t) B. (w.) XXIII. 642	57,1	10,4	....	....	....	4,3	....	23.29.37,41				36,99			23.31.18,53	B.
	(s)(u) α Arietis. . . . .	31,9	46,2	0,8	15,4	....	....	59,2	1.57.15,47				15,00	101,71			B.
	(x) Polaris SP. . . . .	14,5	56,5	38,0	30,5	14,5	57,5	43,5	13. 4.27,86				59,49		1,80	13. 6.42,00	B.
	Polaris SP. B. . . . .	40,0	19,0	26,0	12,0	....	....	....									B.
	(d) Polaris SP. B. . . . .	30,5	9,0	15,5	3,0	....	....	....									B.
	(s) Arcturus. . . . .	....	46,7	1,0	15,1	....	....	....	14. 7.15,29				14,81	102,63		14. 8.57,40	B.
Nov. 1	(y) ☉ I L. . . . .	53,2	7,2	20,9	34,8	49,0	2,8	16,8	14.23.34,96				34,55			14.25.17,16	B.
	☉ 2 L. . . . .	7,2	20,9	34,8	48,8	3,0	16,7	30,7	14.25.48,88				48,47			14.27.31,09	B.
	(z) α Coronæ. . . . .	....	....	....	45,6	1,0	15,7	31,0	15.26.45,62				45,13	102,59		15.28.27,82	B.
	H. C. 41580. . . . .	20,0	33,6	47,4	1,2	15,0	28,8	42,5	21.15. 1,21				0,79			21.16.43,92	B.
	β Aquarii . . . . .	27,7	40,8	54,4	8,1	21,9	35,2	48,8	21.22. 8,13				7,71	103,17		21.23.50,85	B.
	B. (w.) XXI. 675 . . . . .	23,6	37,2	50,7	4,6	18,2	31,8	45,6	21.27. 4,53				4,11			21.28.47,25	B.
	B. (w.) XXI. 775 . . . . .	11,5	25,0	38,8	52,3	6,3	19,8	33,6	21.30.52,47				52,06			21.32.35,21	B.
	B. (w.) XXI. 864 . . . . .	21,2	35,0	48,6	2,3	16,0	29,6	43,3	21.34. 2,28				1,87			21.35.45,02	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40',349, - 26',905, - 13',633, + 0',010, + 13',656, + 26',895, + 40',327.

(a) Clouds passing. (b) The transits at the bars were reckoned the best. (c) The sky just before was quite overcast. (d) At the first and second edges. (e) Cloud came over. (f) Very loud wind. (g) Faint at times. (h) 'Bright.' (i) Cloudy. (k) The times at bars III and IV have each been increased 30' to agree with the time at bar I. (l) Very steady. Thin cirrus cloud northward, gradually becoming denser. (m) Blazing. (n) 'Low in the field: one following higher,' viz. B. (w.) xx. 363, which was set for. (o) 'Close double.' (p) 'The following of two,' the other being No. 747. (q) Misty cloud passing. 'A fainter of the same R.A. northward.' (r) At the second edges of bars I and II, and the first edges of III and IV. (s) Clouds. (t) 'Only one star.' (u) The times have all been increased 3'. (x) Rather faint at times from cirrus cloud, but very steady: wire I doubtful. (y) Bad definition and great waving. (z) The sky misty and star extremely faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Nov. 1	50 Capricorni....	....	38,1	51,8	5,6	19,6	33,3	....	21.37.56,9	-11,4	+5,7	+8,1	5,27			21.38.48,42	B.		
	B. (w.) XXI. 1064.	36,0	49,7	3,6	17,2	31,4	45,2	58,8	21.43.17,42				17,00			21.45.0,16	B.		
	B. (w.) XXI. 1179.	0,9	14,8	28,4	42,2	56,2	9,7	23,8	21.48.42,28				41,86			21.50.25,03	B.		
	α Aquarii.....	52,7	6,4	19,6	33,1	46,6	59,9	13,5	21.56.33,11				32,66	103,25		21.58.15,84	B.		
	B. (w.) XXII. 119.	16,9	30,3	44,1	57,8	11,2	24,4	....	22.4.57,55				57,14			22.6.40,33	B.		
	(a)(b)B.(w.)XXII.119B	50,2	3,8	52,2	5,4	....	....	....	22.4.57,70				57,09			22.6.40,28	B.		
	(c) B. (w.) XXII. 363	53,8	....	....	35,3	49,3	2,9	17,0	22.15.35,34				34,92			22.17.18,12	B.		
	(d) B. (w.) XXII. 444.	35,6	49,4	3,2	17,0	31,1	44,6	58,2	22.19.17,02				16,60			22.20.59,81	B.		
	B. (w.) XXII. 548.	54,4	7,9	21,3	35,0	48,5	2,0	15,6	22.24.34,96				34,55			22.26.17,76	B.		
	B. (w.) XXII. 630.	43,3	57,2	10,7	25,0	38,8	52,3	6,2	22.28.24,79				24,37			22.30.7,59	B.		
	(e) B. (w.) XXII. 748.	51,2	5,0	18,7	32,3	46,4	0,0	13,8	22.33.32,48				32,06			22.35.15,28	B.		
	B. (w.) XXII. 822.	49,2	2,7	16,2	29,7	43,4	56,8	10,4	22.37.29,78				29,37			22.39.12,60	B.		
	Neptune.....	10,6	24,2	37,6	51,0	5,1	18,5	31,8	22.49.51,25				50,83			22.51.34,08	B.		
	(f) Thetis B.....	9,8	23,8	17,2	30,8	....	....	....	22.55.21,63				20,95			22.57.4,20	B.		
	B. (w.) XXIII. 411	20,2	33,4	47,2	0,7	14,6	27,7	41,3	23.19.0,73				0,32			23.20.43,60	B.		
	B. (w.) XXIII. 579	51,5	5,2	18,4	31,9	45,6	59,0	12,6	23.26.32,03				31,62			23.28.14,91	B.		
	Metis.....	....	....	....	....	40,8	54,2	7,4	0.47.27,19				26,74			0.49.10,13	B.		
	Metis B.....	....	....	21,6	34,9	....	....	....	0.47.27,62				26,99			0.49.10,38	B.		
	Polaris.....	....	....	39,5	25,5	18,5	....	45,5	1.5.27,88				58,04			1.6.41,45	B.		
	(g) α Arietis.....	30,2	44,5	59,2	13,5	28,2	42,8	57,4	1.57.13,68				13,21	103,50		1.58.56,69	B.		
	α Ceti.....	15,4	28,7	42,3	55,6	9,3	22,7	36,2	2.52.55,74				55,27	103,54		2.54.38,82	B.		
	(h) Aldebaran.....	7,2	21,2	34,8	48,9	3,2	17,3	31,2	4.25.49,12				48,64	103,61		4.27.32,31	B.		
	H. C. 8826.....	23,8	37,8	51,7	5,6	19,8	33,6	47,7	4.32.5,71				5,22			4.33.48,89	B.		
	Irene.....	28,4	42,2	56,3	10,5	24,6	38,6	52,3	4.35.10,41				9,92			4.36.53,60	B.		
	(b) Irene B.....	0,8	15,0	6,8	20,4	....	....	....	4.35.10,54				9,85			4.36.53,53	B.		
	(i) Polaris SP.....	8,5	57,3	38,0	30,5	13,5	....	....	13.4.26,88				58,51		1,90	13.6.42,76	B.		
Nov. 2	(k) ☉ 1 L.....	47,0	1,0	14,9	28,8	43,1	56,8	10,9	14.27.28,93				28,51			14.29.12,87	B.		
	☉ 2 L.....	1,2	14,8	29,0	42,8	57,1	10,7	24,7	14.29.42,90				42,48			14.31.26,84	B.		
	α Arietis.....	28,1	42,6	57,2	11,7	26,6	41,2	55,7	1.57.11,87				11,40	105,32			B.		
	(l) Aldebaran.....	5,3	19,3	33,3	47,3	1,4	15,3	29,4	4.25.47,33				46,85	105,42			B.		
	(b)(m)Irene B.....	18,2	32,8	24,1	38,0	....	....	....	4.34.28,07				27,32			4.36.12,79	B.		
Nov. 3	Neptune.....	1,8	15,3	29,2	42,6	56,2	9,6	23,2	22.50.42,55				42,13		1,97	22.51.29,15	B.		
	α Andromedæ...	17,8	33,2	48,3	3,6	19,2	34,2	49,6	0.0.3,70				3,21	47,06		0.0.50,32	B.		
	B. (w.) α. 224....	46,1	59,7	13,0	26,5	40,2	53,4	7,0	0.12.26,56				26,09			0.13.13,22	B.		
	(n) H. C. 469.....	20,2	33,4	47,2	0,5	14,2	27,5	40,9	0.16.0,55				0,09			0.16.47,22	B.		
	Aldebaran.....	3,2	17,3	31,3	45,2	59,3	13,3	27,3	4.26.45,27				44,79	47,50		4.27.32,27	B.		
	(o) Irene.....	1,7	15,8	29,5	43,8	57,6	11,2	25,3	4.34.43,56				43,07			4.35.30,56	B.		
	(b) Irene B.....	34,2	48,0	40,1	53,6	....	....	....	4.34.43,77				43,08			4.35.30,57	B.		
(l) Sirius.....	12,7	27,2	40,8	55,3	9,3	23,3	37,2	6.37.55,11				54,67	47,66		6.38.42,33	B.			
Nov. 8	(p) ☉ 1 L.....	27,2	41,2	55,2	9,3	23,4	37,3	....	14.52.9,31		+6,0	+13,0	9,21		1,82	14.53.4,63	B.		
	☉ 2 L.....	42,6	56,6	....	....	....	....	7,0	14.54.24,77				24,67			14.55.20,09	B.		
	B. (w.) XXII. 463.	23,3	36,7	50,2	4,4	18,7	31,8	45,6	22.21.4,39				4,28			22.22.0,27	B.		
	(q)(b)B.(w.)XXII.463B	56,2	9,6	59,7	13,6	....	....	....	22.21.4,58				4,27			22.22.0,26	B.		
	B. (w.) XXII. 589.	35,8	49,4	3,1	16,4	30,3	43,7	57,4	22.27.16,59				16,47			22.28.12,46	B.		
	(r) B.A.C. 7892.....	9,2	22,8	36,6	50,4	4,4	18,2	32,0	22.30.50,51				50,39			22.31.46,39	B.		
	B.A.C. 7920.....	57,4	11,3	24,6	38,2	51,7	5,2	18,9	22.34.38,19				38,07			22.35.34,07	B.		
	(s) B. (w.) XXII. 852.	47,8	1,2	14,3	28,3	41,7	55,6	9,4	22.39.28,33				28,21			22.40.24,22	B.		
	(t) Neptune.....	42,1	56,0	9,6	23,0	37,0	50,2	4,0	22.50.23,13				23,01			22.51.19,03	B.		
	α Pegasi.....	51,3	5,1	18,8	32,6	46,8	0,3	14,4	22.56.32,76				32,50	56,03		22.57.28,53	B.		
	α Andromedæ...	8,7	24,0	39,2	54,3	9,8	25,0	40,2	23.59.54,46				54,14	56,09		0.0.50,25	B.		
	(u) H. C. 469.....	11,3	24,4	37,8	51,2	4,8	18,0	32,0	0.15.51,35				51,14			0.16.47,27	B.		
	(g) β Ceti.....	36,6	50,7	5,2	19,3	33,6	47,6	1,7	0.35.19,25				19,14	56,08		0.36.15,30	B.		
	(x) Metis.....	21,4	34,8	47,8	0,9	14,8	28,6	42,2	0.44.1,50				1,34			0.44.57,51	B.		
	H. C. 2248.....	20,9	34,3	47,6	1,3	14,8	28,2	42,0	1.7.1,30				1,07			1.7.57,27	B.		
	(y) B. (w.) 1. 160....	31,8	45,4	58,8	12,3	26,0	39,2	52,8	1.10.12,33				12,12			1.11.8,32	B.		
	(z) H. C. 2456.....	53,2	6,6	20,2	34,2	48,3	1,9	15,6	1.13.34,29				34,04			1.14.30,24	B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

Nov. 3, 1<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

- (a) Very faint from cloud. (b) At the second edges of bars I and II, and the first edges of III and IV. (c) Misty cloud. (d) The noted times were 1<sup>m</sup> later. (e) 'The north-following star.' (f) At the first edges. Very faint, but the observation 'good.' (g) Bad definition. (h) A large disk. (i) Hid at wires VI and VII. (j) Very faint from cloud: 2 L waving. (k) Blazing. (l) The night was generally overcast. (m) The following of two. The sky suddenly clear, and high north wind. (n) Wire IV, set down 42,8, has been altered conjecturally. (o) Very dimly seen through cloud and fog. (p) 'Bright.' (q) 'One preceding.' (r) 'The smallest stars appear diffused to-night.' (s) 'The following of two.' (t) 'Brighter follows and a brighter precedes.' (u) 'One preceding.' (v) Wire IV is discordant. It is doubtful whether this be the Planet. (w) 'One north-following.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		°	°	°	°	°	°	°		"	"	"				°	°	°	
Nov. 8	(a)(b) B. (w.) I. 275...	....	49,4	2,8	16,4	30,0	42,7	....	1 16. 16,27	11,4	+6,0	+13,0	16,05		1,82	1 17. 12,26	B.		
	96 Piscium.....	49,2	2,7	16,2	29,6	43,4	56,8	10,3	1 20. 29,75				29,52			1 21. 25,73	B.		
	B. (w.) I. 410.....	35,2	48,8	2,7	16,2	29,9	43,4	57,2	1 23. 16,20				15,96			1 24. 12,18	B.		
	(a) B. (w.) I. 480.....	15,4	28,6	42,4	55,8	9,6	22,8	36,6	1 26. 55,89				55,66			1 27. 51,88	B.		
	(c) B. (w.) I. 480 B..	48,9	2,3	51,1	4,2	....	....	....	1 26. 56,22				55,79			1 27. 52,01	B.		
	(d) B.A.C. 511.....	16,8	30,3	44,0	57,4	11,2	24,6	38,3	1 31. 57,52				57,28			1 32. 53,51	B.		
	H. C. 3386.....	42,3	56,0	9,6	22,8	36,7	50,2	3,6	1 42. 23,03				22,81			1 43. 19,05	B.		
	α Arietis.....	17,1	31,5	45,8	0,6	15,4	29,7	44,3	1 58. 0,62				0,34	56,41		1 58. 56,60	B.		
	(e) Astræa.....	17,7	30,8	44,0	57,3	11,5	25,3	38,8	2 0. 57,92				57,70			2 1. 53,96	B.		
	(f) Astræa B.....	48,7	1,8	52,6	5,6	....	....	....	2 0. 58,38				57,96			2 1. 54,22	B.		
	(g) Aldebaran.....	54,2	8,3	22,2	36,3	50,3	4,3	18,3	4 26. 36,27				36,01	56,38		4 27. 32,46	B.		
	Irene.....	....	....	28,8	....	55,9	10,3	24,3	4 30. 42,36				42,09			4 31. 38,54	B.		
Nov. 9	(h) Neptune.....	39,2	52,8	6,3	19,8	33,9	47,1	0,9	22 50. 20,00				19,88		1,76	22 51. 17,73	B.		
	α Pegasi.....	49,4	3,2	16,8	30,9	45,0	58,7	12,6	22 56. 30,94				30,68	57,84			B.		
	B. (w.) I. 68.....	54,0	7,4	20,6	34,2	47,8	1,2	14,6	1 4. 34,26				34,07			1 5. 32,08	B.		
	(i) B. (w.) I. 133....	41,2	55,2	8,6	22,0	36,0	49,5	3,0	1 8. 22,21				21,97			1 9. 19,99	B.		
	(k) α Arietis.....	15,2	29,8	44,3	58,8	13,7	28,2	42,7	1 57. 58,96				58,68	58,08			B.		
Nov. 10	Neptune.....	35,7	49,3	2,8	16,3	30,3	43,6	57,3	22 50. 16,47		+5,7		16,34		1,83	22 51. 15,87	B.		
	(k) B. (w.) XXIII. 159	23,6	....	50,8	4,3	18,3	31,6	45,0	23 8. 4,40				4,27			23 9. 3,83	B.		
	(f) B.(w.)XXIII.159 B	54,2	7,9	59,5	12,8	....	....	....	23 8. 4,81				4,48			23 9. 4,04	B.		
	B. (w.) XXIII. 261.	....	38,0	51,7	5,1	18,6	31,8	....	23 12. 5,05				4,91			23 13. 4,47	B.		
	B.(w.)XXIII.261 B	54,8	8,4	59,4	12,8	....	....	....	23 12. 5,06				4,72			23 13. 4,28	B.		
	(l) B. (w.) XXIII. 411	3,2	....	30,3	43,7	57,7	10,8	24,3	23 19. 43,81				43,68			23 20. 43,25	B.		
	B. (w.) XXIII. 682	31,7	45,2	58,5	12,2	25,6	38,8	52,3	23 32. 12,04				11,83			23 33. 11,42	B.		
	B. (w.) XXIII. 751	9,3	22,6	36,1	49,6	3,0	16,3	29,8	23 35. 49,53				49,33			23 36. 48,92	B.		
	H. C. 46938.....	57,1	10,7	24,1	37,6	51,3	4,5	18,0	23 48. 37,62				37,40			23 49. 37,01	B.		
	(l) B. (w.) XXIII. 1090	25,2	....	52,0	5,3	18,8	....	....	23 52. 5,40				5,20			23 53. 4,81	B.		
	α Andromedæ...	5,2	20,3	35,6	50,8	6,3	21,4	36,7	23 59. 50,90				50,56	59,65		0 0. 50,18	B.		
	(m) H. C. 134.....	38,6	52,0	5,4	18,8	32,3	45,9	59,2	0 5. 18,89				18,68			0 6. 18,31	B.		
	β Ceti.....	33,2	47,4	1,6	15,6	30,3	44,2	58,4	0 35. 15,82				15,70	59,51		0 36. 15,37	B.		
	Polaris.....	56,0	49,5	....	6,8	....	....	40,5	1 6. 16,19				38,82				B.		
	(n) Metis B.....	57,6	9,8	1,0	14,3	....	....	....	0 42. 6,88				6,45			0 44. 6,13	B.		
	B. (w.) o. 943....	25,2	38,3	51,8	5,3	19,2	32,3	46,1	0 53. 5,46				5,22			0 54. 4,91	B.		
	B. (w.) o. 997....	20,9	34,4	47,8	1,5	15,4	28,7	42,2	0 56. 1,55				1,29			0 57. 0,98	B.		
	B. (w.) o. 1049...	42,8	56,7	10,6	24,2	38,2	51,6	5,3	0 58. 24,20				23,93			0 59. 23,63	B.		
	B. (w.) I. 23.....	15,8	29,3	43,0	56,3	10,2	23,6	37,2	1 1. 56,49				56,25			1 2. 55,95	B.		
	α Arietis.....	13,3	28,2	42,4	57,3	11,7	26,3	40,9	1 57. 57,16				56,86	59,90		1 58. 56,63	B.		
Nov. 11	(o) Neptune.....	31,9	45,3	58,8	12,3	26,3	39,6	53,3	22 50. 12,50	-0,9			13,08		1,72	22 51. 14,64	B.		
	α Pegasi.....	44,9	58,7	12,4	26,4	40,6	54,2	3,2	22 56. 26,49				26,93	61,56			B.		
Nov. 12	(p) ☉ 1 L.....	29,8	43,8	57,8	12,3	26,6	40,6	54,8	15 8. 12,24				12,86		1,62	15 9. 15,51	B.		
	☉ 2 L.....	46,2	0,3	14,3	28,4	42,6	56,6	11,2	15 10. 28,52				29,14			15 11. 31,80	B.		
Nov. 14	B.A.C. 7835.....	....	37,0	50,8	4,6	18,6	32,3	....	22 21. 4,67		+6,8	+15,8	5,49		1,61	22 22. 11,86	B.		
	B.A.C. 7892 sf....	57,8	11,6	25,4	39,2	53,2	6,9	20,7	22 30. 39,26				40,08			22 31. 46,46	B.		
	B. (w.) XXII. 747	22,9	36,4	50,7	4,2	18,1	31,8	45,8	22 34. 4,27				5,09			22 35. 11,47	B.		
	B. (w.) XXII. 822.	25,1	38,1	51,7	5,2	19,0	32,6	45,9	22 38. 5,37				6,13			22 39. 12,52	B.		
	* N.P.D. 98°. 2'.	54,8	....	21,7	....	49,7	....	16,6	22 42. 35,67				36,46			22 43. 42,86	B.		
	* N.P.D. 98°. 2' B	25,6	38,9	30,7	43,9	....	....	....	22 42. 35,98				36,57			22 43. 42,97	B.		
	Neptune.....	23,2	36,7	50,2	3,8	17,7	31,2	44,8	22 50. 3,94				4,73			22 51. 11,13	B.		
	α Pegasi.....	39,8	53,6	7,5	21,3	35,3	49,2	3,3	22 56. 21,42				22,04	66,42		22 57. 28,45	B.		
	B. (w.) XXIII. 4..	44,3	58,0	11,3	24,8	38,4	51,8	5,3	23 0. 24,84				25,58			23 1. 31,99	B.		
	B. (w.) XXIII. 136	59,7	13,0	26,6	40,0	53,8	7,2	20,8	23 6. 40,15				40,91			23 7. 47,33	B.		
	B. (w.) XXIII. 210	0,3	13,7	27,3	40,8	54,3	7,8	21,0	23 9. 40,74				41,45			23 10. 47,87	B.		
	B. (w.) XXIII. 261	....	30,0	43,6	57,2	10,9	24,2	....	23 11. 57,19				57,95			23 13. 4,38	B.		
	B. (w.) XXIII. 289	....	45,6	58,9	12,6	26,2	39,8	....	23 13. 12,63				13,39			23 14. 19,82	B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) Faint. (b) 'The last of four in a line.' (c) At the second edges of bars I and II and the first edges of III and IV. (d) 'A fainter of equal N.P.D. follows.' (e) The intervals are discordant, and the mean differs largely from that by the bars. (f) At the first edges. (g) A large disk. (h) Mist. (i) 'A small companion south-preceding.' (k) Cloudy. (l) Cloud. (m) 'The brightest of three.' (n) 'Bright.' (o) The sky very misty. (p) Unsteadiness and bad definition. (q) 'A brighter preceding and a fainter following.' The brighter was 72 Aquarii.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"	"	s.	s.	s.	h. m. s.		
Nov.14	B. (w.) xxiii. 362	18,7	32,2	45,3	58,9	12,6	25,6	39,4	23. 16. 58,96	-0,9	+6,8	+15,8	59,66		1,61	23. 18. 6,09	B.		
	B.A.C. 8184.....	10,7	24,2	37,6	51,1	4,9	18,2	31,8	23. 20. 51,21				51,97			23. 21. 58,41	B.		
	Euterpe.....	30,7	44,8	58,2	12,6	26,7	40,5	54,6	3. 12. 12,57				13,19			3. 13. 19,89	B.		
	Aldebaran.....	43,1	57,2	11,3	24,9	39,4	53,3	7,3	4. 26. 25,21				25,83	66,67		4. 27. 32,61	B.		
	Rigel.....	43,0	56,5	10,2	23,4	37,3	50,8	4,1	5. 6. 23,61				24,39	66,93		5. 7. 31,21	B.		
Nov.16	⊙ 1 L.....	....	....	....	29,3	43,6	58,2	11,8	15. 24. 29,34				30,17		1,64	15. 25. 39,29	B.		
	⊙ 2 L.....	4,3	18,6	32,6	46,9	1,3	15,6	29,9	15. 26. 47,03				47,86			15. 27. 56,98	B.		
	β Aquarii.....	0,2	13,5	27,1	40,4	54,1	7,5	21,2	21. 22. 40,57				41,33	69,34		21. 23. 50,85	B.		
	B. (w.) o. 590....	30,3	43,7	57,2	....	24,0	38,2	51,8	0. 33. 10,86				11,49			0. 34. 21,23	B.		
	B. (w.) o. 657....	....	29,2	42,4	56,2	9,6	23,1	....	0. 36. 56,11				56,76			0. 38. 6,50	B.		
	B. (w.) o. 738....	53,1	7,0	20,1	33,8	47,8	1,3	14,8	0. 41. 33,99				34,63			0. 42. 44,38	B.		
	B. (w.) o. 800....	55,8	9,3	22,7	36,1	49,7	2,8	16,7	0. 44. 36,16				36,82			0. 45. 46,57	B.		
	(a) Polaris.....	21,5	7,0	52,5	36,0	29,0	10,5	1,5	1. 5. 39,71				27,59				B.		
	Polaris M.....	19,5	4,5	50,5	36,0	20,5	6,0	49,5	1. 5. 37,68				25,56				B.		
	(b) Polaris M.....	34,0	....	....	....	....	....	34,5									B.		
	(c) α Arietis.....	2,5	16,8	31,7	46,2	1,0	15,4	30,0	1. 57. 46,23				46,86	69,92		1. 58. 56,70	B.		
	(d) H. C. 4363.....	57,4	11,2	24,5	37,9	51,8	5,2	18,6	2. 12. 38,09				38,74			2. 13. 48,59	B.		
	(e) B. (w.) II. 271...	21,9	35,4	49,4	3,2	17,2	30,5	44,6	2. 16. 3,17				3,80			2. 17. 13,66	B.		
	B. (w.) II. 359...	57,4	11,2	24,6	38,3	52,2	5,5	19,1	2. 20. 38,33				38,96			2. 21. 48,82	B.		
	(f) B.A.C. 782.....	34,1	48,1	2,2	16,5	30,6	44,8	59,0	2. 24. 16,47				17,10			2. 25. 26,96	B.		
	α Ceti.....	48,1	1,6	14,9	28,3	42,0	55,3	8,8	2. 53. 28,43				29,09	69,85		2. 54. 38,99	B.		
	(g) Euterpe.....	25,9	40,1	54,0	7,8	22,1	35,8	49,8	3. 10. 7,93				8,55			3. 11. 18,40	B.		
	Aldebaran.....	....	53,6	7,7	21,8	35,9	49,8	3,7	4. 26. 21,75				22,37	70,16		4. 27. 32,38	B.		
	Rigel.....	39,8	53,5	6,8	20,6	34,2	47,7	1,3	5. 6. 20,55				21,33	70,03		5. 7. 31,38	B.		
Nov.17	⊙ 1 L.....	53,6	7,7	21,8	35,9	50,6	4,7	19,1	15. 28. 36,20				37,03		1,61	15. 29. 47,82	B.		
	⊙ 2 L.....	11,0	25,3	39,5	53,8	8,1	22,3	36,6	15. 30. 53,80				54,63			15. 32. 5,42	B.		
	B. (w.) xxii. 589.	19,8	33,1	46,6	0,3	14,0	27,6	40,9	22. 27. 0,32				1,11			22. 28. 12,37	B.		
	B.A.C. 7920.....	41,0	54,9	8,3	21,8	35,8	48,9	2,8	22. 34. 21,93				22,72			22. 35. 33,99	B.		
	(h) B. (w.) xxii. 855.	50,7	4,1	17,7	31,2	45,2	58,6	12,2	22. 39. 31,38				32,17			22. 40. 43,44	B.		
	Neptune.....	....	29,6	43,1	56,4	10,4	23,8	37,6	22. 49. 56,69				57,48			22. 51. 8,76	B.		
	α Pegasi.....	34,8	48,7	2,6	16,6	30,6	44,3	58,3	22. 56. 16,56				17,18	71,24		22. 57. 28,47	B.		
	B. (w.) xxii. 1269	23,2	36,5	50,0	3,6	17,2	30,4	44,0	22. 59. 3,56				4,27			23. 0. 15,56	B.		
	B. (w.) xxiii. 84.	58,2	11,8	25,4	39,2	52,8	6,4	19,8	23. 4. 39,09				39,88			23. 5. 51,18	B.		
	(i) B. (w.) xxiii. 159	11,2	24,6	....	51,7	5,8	19,6	32,8	23. 7. 52,01				52,80			23. 9. 4,10	B.		
	(k) B. (w.) xxiii. 261	....	25,3	38,5	52,2	5,8	19,2	....	23. 11. 52,21				52,98			23. 13. 4,29	B.		
	(k)(l) B. (w.) xxiii. 516	43,1	....	....	24,3	....	51,6	5,4	23. 24. 24,28				25,08			23. 25. 36,40	B.		
	B. (w.) xxiii. 613	....	7,3	20,3	33,8	....	....	14,3	23. 28. 33,96				34,69			23. 29. 46,02	B.		
	(m) B. (w.) xxiii. 613 B	....	....	28,2	41,4	....	....	....	23. 28. 34,15				34,68			23. 29. 46,01	B.		
	α Andromedæ...	52,3	7,6	22,8	38,0	53,6	8,7	24,0	23. 59. 38,15				38,77	71,38		0. 0. 50,13	B.		
	α Ceti.....	46,1	59,7	13,3	26,6	40,3	53,6	7,3	2. 53. 26,70				27,36	71,59		2. 54. 38,92	B.		
	Euterpe.....	24,0	37,8	51,8	5,8	20,0	33,7	48,0	3. 9. 5,87				6,49			3. 10. 18,06	B.		
(n) Aldebaran.....	....	52,2	6,1	20,3	34,5	48,3	....	4. 26. 20,28				20,90	71,65		4. 27. 32,56	B.			
Nov.18	B. (w.) xxii. 987	37,1	50,7	4,2	17,6	31,3	45,0	58,6	22. 46. 17,79				18,58		1,72	22. 47. 31,40	B.		
	Neptune.....	13,8	27,2	40,6	54,3	8,2	21,4	35,2	22. 49. 54,39				55,18			22. 51. 8,01	B.		
	α Pegasi.....	33,3	47,2	0,8	14,8	28,9	42,6	56,4	22. 56. 14,86				15,48	72,93		22. 57. 28,31	B.		
	(i)(o) B. (w.) xxiii. 13	9,5	....	36,5	50,1	3,8	17,0	....	23. 0. 50,08				50,84			23. 2. 3,68	B.		
	(i) B. (w.) xxiii. 81.	42,2	....	....	20,6	33,9	47,4	0,9	23. 4. 20,91				21,62			23. 5. 34,46	B.		
	B. (w.) xxiii. 159	10,2	....	36,4	50,2	....	17,2	....	23. 7. 50,32				51,11			23. 9. 3,96	B.		
	B.(w.)xxiii.159 B	39,8	53,9	45,0	58,3	....	....	....	23. 7. 50,46				51,05			23. 9. 3,90	B.		
	B. (w.) xxiii. 409	....	56,3	9,4	23,1	36,8	50,0	....	23. 19. 23,12				23,86			23. 20. 36,72	B.		
	B. (w.) xxiii. 490	33,2	46,8	0,2	13,5	27,3	40,3	53,9	23. 23. 13,60				14,33			23. 24. 27,20	B.		
	B. (w.) xxiii. 579	20,2	....	47,4	0,8	14,7	....	....	23. 27. 0,93				1,69			23. 28. 14,56	B.		
	(p) B.(w.)xxiii.579 B	51,2	4,4	55,6	9,1	....	....	....	23. 27. 1,28				1,84			23. 28. 14,71	B.		
	B. (w.) xxiii. 977	....	12,5	....	39,1	....	6,2	....	23. 46. 39,31				40,04			23. 47. 52,94	B.		
	(i)(q) B.(w)xxiii.977 B	29,5	42,9	33,6	46,8	....	....	....	23. 46. 39,40				30,93			23. 47. 52,83	B.		
	B. (w.)xxiii. 1066	13,8	27,1	40,6	54,1	7,6	21,2	34,6	23. 50. 54,14				54,81			23. 52. 7,71	B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Steady. (b) At the distances of -4" and +4" from the middle wire. The concluded transit is the mean of the nine transits. (c) A thick sky  
(d) 'A fainter preceding.' (e) 'One south-following.' (f) 'One of Mag. 9 and equal N.P.D. preceded 1m.' (g) 'Bright.' (h) 'One preceding.'  
(i) Very faint. (k) The sky very hazy. (l) 'A fainter of equal N.P.D. preceded by one interval, and a brighter followed.' (m) 'One southward.'  
(n) Indefinite. (o) 'Another north-preceding by 20.' (p) Very faint from cloud. Wire VI, written down 27,1, is rejected as being discordant.  
(q) 'The brightest of several in a curved line.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Aimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Nov. 18	H. C. 47229.....	59,0	12,5	25,8	39,2	52,8	6,3	19,9	23.56.39,36	-0,9	+6,8	+15,8	40,04		1,72	23.57.52,95			B.
	α Andromedæ...	50,7	6,0	21,3	35,5	52,0	7,1	23,6	23.59.36,60				37,22	72,92		0.0.50,13			B.
	B. (w.) o. 65.....	12,8	26,0	39,6	53,3	7,0	20,3	33,8	0.2.53,26				54,03			0.4.6,95			B.
	B. (w.) o. 132...	20,6	34,0	47,4	0,6	14,6	27,9	41,1	0.7.0,88				1,59			0.8.14,51			B.
	B.A.C. 132.....	6,5	19,8	33,2	46,8	0,2	13,6	27,2	0.24.46,76				47,47			0.26.0,41			B.
	B. (w.) o. 492...	1,3	14,8	28,2	41,8	55,3	8,8	22,2	0.27.41,77				42,48			0.28.55,42			B.
	β Ceti.....	18,8	33,0	47,3	1,3	15,7	29,8	44,1	0.35.1,42				2,27	72,88		0.36.15,22			B.
	α Ceti.....	.....	.....	.....	25,3	39,0	52,2	5,6	2.53.25,30				25,96	73,00		2.54.39,08			B.
	Euterpe.....	22,6	36,6	50,3	4,3	18,6	32,2	46,2	3.8.4,40				5,02			3.9.18,16			B.
	(a) Irene B.....	.....	.....	11,3	24,6	.....	.....	.....	4.21.15,03				15,39			4.22.28,61			B.
	Aldebaran.....	36,6	50,6	4,6	18,6	32,8	46,6	0,6	4.26.18,63				19,25	73,32		4.27.32,48			B.
Nov. 19	(b) B. (w.) xxii. 822.	16,3	....	43,3	56,8	10,5	24,2	37,6	22.37.56,93				57,69		1,86	22.39.12,32			B.
	B. (w.) xxii. 889.	....	28,8	42,2	55,8	9,3	22,5	....	22.40.55,73				56,46			22.42.11,09			B.
	B. (w.) xxii. 933.	7,0	20,6	34,2	47,8	1,8	15,2	29,0	22.43.47,95				48,75			22.45.3,38			B.
	B. (w.) xxii. 987.	35,3	48,7	2,5	16,0	29,9	43,3	56,9	22.46.16,09				16,88			22.47.31,52			B.
	Neptune.....	11,6	25,0	38,5	52,1	5,9	19,4	33,1	22.49.52,23				53,02			22.51.7,66			B.
	α Pegasi.....	31,6	45,3	59,2	13,2	27,0	40,9	54,8	22.56.13,14				13,76	74,63		22.57.28,41			B.
	B. (w.) xxii. 1269	19,6	33,2	46,6	0,1	13,6	27,0	40,6	22.59.0,10				0,81			23.0.15,46			B.
	B. (w.) xxiii. 81.	38,9	52,2	5,6	19,2	32,6	46,0	59,6	23.4.19,16				19,87			23.5.34,53			B.
	B. (w.) xxiii. 159	7,9	21,6	34,9	48,3	2,1	15,1	29,3	23.7.48,53				49,32			23.9.3,98			B.
	H. C. 45641.....	35,8	48,9	2,3	15,6	29,7	43,1	56,4	23.10.15,97				16,71			23.11.31,38			B.
	B. (w.) xxiii. 304	20,2	33,6	....	0,6	14,3	27,6	41,2	23.14.0,65				1,42			23.15.16,09			B.
	B. (w.) xxiii. 304B.	50,6	4,0	55,0	8,4	....	....	....	23.14.0,71				1,28			23.15.15,95			B.
	B. (w.) xxiii. 386	23,5	37,2	50,4	3,9	17,6	30,9	44,3	23.18.3,97				4,66			23.19.19,34			B.
	α Andromedæ...	49,2	4,4	19,6	34,8	50,3	5,3	20,7	23.59.34,90				35,52	74,61		0.0.50,25			B.
	B. (w.) o. 224...	17,6	30,8	44,2	57,8	11,6	24,8	38,1	0.11.57,85				58,53			0.13.13,28			B.
	(c) H. C. 469.....	51,3	4,8	18,3	31,7	45,3	58,6	12,2	0.15.31,74				32,43			0.16.47,18			B.
	B. (w.) o. 390....	46,2	59,6	12,9	26,6	40,3	53,5	7,3	0.22.26,63				27,29			0.23.42,05			B.
	(d) B. (w.) o. 450....	40,6	53,9	7,4	20,9	34,6	48,0	1,6	0.25.21,00				21,66			0.26.36,43			B.
	B. (w.) o. 512....	35,8	49,5	3,2	16,6	30,3	43,8	57,6	0.29.16,69				17,32			0.30.32,09			B.
	B. (w.) o. 571....	30,6	44,3	57,6	10,8	24,2	37,7	51,3	0.32.10,93				11,60			0.33.26,37			B.
	β Ceti.....	16,8	31,3	45,4	59,6	13,8	27,8	42,3	0.34.59,58				0,41	74,73		0.36.15,19			B.
	Metis.....	33,2	46,4	0,2	13,6	27,2	40,5	53,8	0.40.13,56				14,28			0.41.29,06			B.
	α Ceti.....	42,8	56,3	9,7	23,2	36,8	50,2	3,7	2.53.23,26				23,92	75,04		2.54.38,88			B.
	(e) Euterpe.....	20,7	35,2	49,1	2,7	17,3	31,1	44,8	3.7.2,98				3,60			3.8.18,57			B.
	(f) Irene.....	30,7	44,7	58,6	12,6	27,0	41,1	54,8	4.20.12,78				13,40			4.21.28,47			B.
	Aldebaran.....	34,6	48,6	3,0	16,6	31,0	44,6	59,1	4.26.16,79				17,41	75,17		4.27.32,49			B.
Nov. 21	(g) ☉ 1 L.....	27,3	41,6	56,0	10,2	24,6	38,9	53,3	15.45.10,27		+7,1		11,11		1,86	15.46.29,03			B.
	☉ 2 L.....	45,7	0,0	14,3	28,8	43,3	57,3	11,7	15.47.28,73				29,57			15.48.47,50			B.
	Neptune.....	7,4	21,2	34,6	48,2	1,8	15,2	28,9	22.49.48,19				48,99			22.51.7,46			B.
	α Pegasi.....	27,6	41,4	54,9	9,1	23,2	37,0	51,0	22.56.9,18				9,81	78,56					B.
	Metis.....	15,4	28,6	41,9	55,4	9,3	22,4	35,8	0.39.55,54				56,27			0.41.14,88			B.
	Euterpe.....	21,0	34,6	48,3	2,3	16,4	30,3	44,2	3.5.2,44				3,08			3.6.21,88			B.
	Aldebaran.....	31,2	45,0	59,3	13,0	27,3	41,0	55,3	4.26.13,16				13,80	78,81					B.
Nov. 22	Neptune.....	5,3	19,1	32,3	46,2	0,1	13,3	27,0	22.49.46,19				46,99		1,84	22.51.7,30			T.
	α Pegasi.....	25,6	39,7	53,2	7,3	21,6	35,2	49,2	22.56.7,40				8,03	80,32					T.
Dec. 1	Neptune.....	....	8,0	22,0	35,6	49,3	2,3	16,3	22.49.35,46			+14,7	36,20		1,77	22.51.12,58			T.
	α Pegasi.....	9,7	23,7	37,6	51,2	5,3	19,0	32,9	22.55.51,34				51,93	96,31		22.57.28,32			T.
	Polaris.....	....	....	16,0	59,0	....	....	....	1.5.2,91				53,11						T.
	Polaris M.....	45,5	29,5	14,0	59,0	46,0	28,0	14,0	1.5.1,74				51,94						T.
	(h) Polaris M.....	58,5	....	....	....	....	....	57,0											T.
	(i) Aldebaran.....	13,6	27,5	41,4	55,3	9,5	23,3	37,3	4.25.55,41				56,00	96,76		4.27.32,80			T.
	Aldebaran B.....	....	....	51,8	5,3	....	....	....	4.25.55,42				55,89			4.27.32,69			T.
	Rigel.....	....	....	40,4	53,7	7,6	21,2	34,7	5.5.53,93				54,66	96,89		5.7.31,51			T.
	Rigel B.....	....	....	48,7	2,2	....	....	....	5.5.54,18				54,79			5.7.31,64			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40',349, - 26',905, - 13',633, + 0',010, + 13',656, + 26',895, + 40',327.

(a) Almost hid by cloud. (b) Disappearing at intervals. (c) 'One of Mag. 9 preceded.' (d) 'One north-following.' (e) Bright.  
(f) Faint. (g) Very ragged. (h) At the intervals - 4' and + 4' from the middle wire. (i) Faint at times from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"	s.	s.	s.	h.	m.	s.	
Dec. 1	$\beta$ Tauri.....	40,5	55,7	10,8	26,2	41,7	56,8	12,2	5. 15. 26,27	-0,9	+7,1	+14,7	26,86	96,95	1,77	5. 17. 3,72			T.
	$\beta$ Tauri B.....	....	....	28,1	42,8	....	....	....	5. 15. 26,48				26,95			5. 17. 3,81			T.
Dec. 2	$\odot$ 1 L.....	5,0	19,3	33,7	48,2	3,2	17,4	31,9	16. 31. 48,39				49,10		1,77	16. 33. 26,78			T.
	$\odot$ 2 L.....	25,3	40,0	54,6	9,0	23,8	38,2	52,7	16. 34. 9,09				9,80			16. 35. 47,48			T.
	Neptune.....	54,2	7,7	21,3	34,7	48,6	2,0	15,7	22. 49. 34,89				35,63			22. 51. 13,77			T.
	$\alpha$ Pegasi.....	7,5	21,6	35,7	49,3	3,5	17,2	31,1	22. 55. 49,42				50,01	98,22		22. 57. 28,16			T.
	(a) B. (w.) 1. 157...	35,6	49,0	....	15,7	29,4	42,7	56,1	1. 9. 15,82				16,45			1. 10. 54,77			T.
	(b) B.A.C. 410.....	59,2	12,5	26,0	39,7	53,4	6,7	20,2	1. 13. 39,68				40,30			1. 15. 18,62			T.
	$\mu$ Piscium.....	12,3	25,8	39,3	53,0	6,7	20,0	33,5	1. 20. 52,94				53,56			1. 22. 31,89			T.
	B. (w.) 1. 480....	32,7	46,2	59,7	13,0	27,0	40,0	53,7	1. 26. 13,18				13,79			1. 27. 52,13			T.
	B. (w.) 1. 540....	3,8	17,3	30,7	44,1	57,5	11,1	24,3	1. 29. 44,11				44,74			1. 31. 23,08			T.
	B. (w.) 1. 757....	17,2	31,2	45,1	58,7	13,0	26,7	40,8	1. 40. 58,96				59,56			1. 42. 37,92			T.
	B. (w.) 1. 969....	56,8	10,3	23,9	37,7	51,5	5,1	18,9	1. 52. 37,75				38,35			1. 54. 16,72			T.
	$\alpha$ Arietis.....	34,0	48,7	3,2	17,7	32,3	46,7	1,5	1. 57. 17,73				18,34	98,42		1. 58. 56,72			T.
	(c) Euterpe.....	34,3	48,3	2,3	16,2	30,6	44,1	58,0	2. 55. 16,26				16,85			2. 56. 55,30			T.
	Euterpe B.....	....	4,3	18,1	26,1	....	....	....	2. 55. 16,48				16,95			2. 56. 55,40			T.
	(d) Irene.....	....	....	5,0	19,2	33,0	47,1	1,1	4. 6. 19,12				19,71			4. 7. 58,24			T.
	Irene B.....	....	....	15,5	29,1	....	....	....	4. 6. 19,37				19,84			4. 7. 58,37			T.
	Aldebaran.....	11,7	25,7	39,7	53,7	7,8	21,7	35,6	4. 25. 53,70				54,29			4. 27. 32,85			T.
	Aldebaran B....	41,3	55,1	50,1	3,7	....	....	....	4. 25. 53,80				54,27	98,48		4. 27. 32,83			T.
	Rigel.....	11,6	25,2	38,7	52,3	6,0	19,6	33,1	5. 5. 52,35				53,08			5. 7. 31,69			T.
	Rigel B.....	41,8	55,5	47,0	0,3	....	....	....	5. 5. 52,36				52,97	98,57		5. 7. 31,58			T.
	$\beta$ Tauri.....	38,7	54,0	9,3	24,7	40,2	55,2	10,7	5. 15. 24,69				25,28			5. 17. 3,90			T.
	$\beta$ Tauri B.....	5,3	20,7	26,2	41,2	....	....	....	5. 15. 24,72				25,19	98,60		5. 17. 3,81			T.
Dec. 5	$\odot$ 1 L.....	2,3	16,7	31,2	45,7	0,5	15,1	29,5	16. 44. 45,86		+7,3	+16,0	46,73		1,76	16. 46. 29,71			T.
	$\odot$ 2 L.....	23,4	37,6	52,2	6,7	21,8	36,2	50,7	16. 47. 6,95				7,82			16. 48. 50,80			T.
Dec. 8	$\alpha$ Serpentis.....	31,3	44,7	58,3	11,7	25,5	38,7	52,7	15. 35. 11,84				12,52	109,84	1,72	15. 37. 2,43			T.
Dec. 9	$\odot$ 1 L.....	....	....	....	9,9	24,6	39,2	53,7	17. 2. 9,88				10,66			17. 4. 0,67			T.
	$\odot$ 2 L.....	47,7	2,3	16,8	31,7	46,7	0,8	15,7	17. 4. 31,67				32,45			17. 6. 22,47			T.
	$\alpha$ Ophiuchi.....	35,2	48,7	2,3	16,4	30,2	43,9	57,8	17. 26. 16,36				17,03	110,05		17. 28. 7,07			T.
	(e) $\delta$ Ursæ Minoris...	....	52,5	39,0	25,0	....	59,5	47,0	18. 17. 26,40				22,08			....			T.
	(f) $\alpha$ Andromedæ....	....	28,2	43,2	58,4	14,2	29,3	44,7	23. 58. 58,70				59,36	110,52		0. 0. 49,87			T.
	(g) Polaris M.....	24,5	9,5	55,0	42,5	25,0	8,5	54,0	1. 4. 42,29				30,91			....			T.
	(h) Polaris M.....	39,0	....	....	....	....	....	38,5	....				....			....			T.
	(i) Euterpe.....	4,6	18,2	32,1	....	0,2	14,0	28,0	2. 50. 46,17				46,83			2. 52. 37,55			T.
	Euterpe B.....	34,3	48,0	42,2	55,7	....	....	....	2. 50. 46,29				46,83			2. 52. 37,55			T.
	(k)(l) $\beta$ Tauri.....	....	....	57,1	12,3	27,7	42,8	58,3	5. 15. 12,35				13,00	110,96		5. 17. 3,89			T.
Dec. 12	(l) Neptune.....	....	....	....	....	4,2	....	....	22. 49. 37,04			+15,6	37,84		1,71	22. 51. 33,39			T.
	Neptune B.....	....	....	31,7	45,1	....	....	....	22. 49. 37,14				37,82			22. 51. 33,37			T.
	$\alpha$ Pegasi.....	50,3	4,2	18,0	31,7	46,0	59,7	13,7	22. 55. 31,94				32,58	115,51		22. 57. 28,13			T.
	$\alpha$ Pegasi B.....	....	....	27,9	41,6	....	....	....	22. 55. 32,16				32,68			22. 57. 28,23			T.
	$\alpha$ Andromedæ....	7,7	22,9	38,3	53,4	9,0	24,2	39,3	23. 58. 53,54				54,18	115,66		0. 0. 49,81			T.
	(m) 11 Ceti.....	48,3	1,7	15,1	28,4	42,2	55,7	9,0	0. 20. 28,63				29,37			0. 22. 25,03			T.
	B. (w.) o. 425....	43,6	57,0	10,3	23,9	37,3	50,7	4,3	0. 23. 23,87				24,59			0. 25. 20,25			T.
	(n) B. (w.) o. 506....	11,9	25,6	39,0	....	6,3	19,7	33,1	0. 27. 52,59				53,27			0. 29. 48,94			T.
	H. C. 1083.....	5,4	18,7	32,7	45,7	59,6	12,9	26,3	0. 31. 45,90				46,64			0. 33. 42,31			T.
	B. (w.) o. 635....	9,1	22,7	35,8	49,7	3,4	16,8	30,4	0. 34. 49,70				50,37			0. 36. 46,04			T.
	B. (w.) o. 686....	1,6	15,1	28,9	42,3	56,0	9,7	23,2	0. 37. 42,40				43,05			0. 39. 38,73			T.
	(o) Metis.....	38,0	51,2	5,0	18,3	32,0	45,3	58,9	0. 44. 18,39				19,09			0. 46. 14,77			T.
	Metis B.....	8,7	22,0	13,0	25,7	....	....	....	0. 44. 18,55				19,13			0. 46. 14,81			T.
	Polaris.....	....	....	47,5	34,0	29,0	....	....	1. 4. 36,85				26,08			....			T.
	Polaris M.....	17,5	4,5	46,0	34,0	19,0	3,5	49,0	....				....			....			T.
	(h) Polaris M.....	35,0	....	....	....	....	....	33,5	1. 4. 36,24				25,47			....			T.
	$\alpha$ Arietis.....	16,3	31,2	45,7	0,3	15,0	29,3	44,0	1. 57. 0,25				0,90	115,81		1. 58. 56,67			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, -40', 349, -26', 905, -13', 633, +0', 010, +13', 656, +26', 895, +40', 327.

- (a) 'One of Mag. 8 south-following.' (b) The observer noticed that on account of index error of the setting circle stars came high in the field.  
 (c) 'Good.' No object near this. (d) Probably the Planet. (e) 'Good.' Wire VII was 1<sup>m</sup> in excess. (f) Scarcely seen for cloud. (g) The reading for coincidence with the middle wire was not satisfactorily taken on account of bad lamp-light. (h) At the intervals of -4' and +4' from the middle wire. (i) 'Good observation.' (j) Very faint from cloud. (k) Hid at the other wires. (l) All the wires except I and II have been corrected by +1' for error in counting. (m) Very faint. 'A fainter south-following.' (n) Faint from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Dec.12	(a) Euterpe.....	39,7	53,3	7,1	21,2	35,3	49,0	3,0	2.49.21,22	-0,9	+7,3	+15,6	21,86		1,71	2.51.17,69	T.		
	Euterpe B.....	9,2	23,1	17,1	31,0	....	....	....	2.49.21,34				21,86			2.51.17,69	T.		
	α Ceti.....	....	15,7	28,9	42,3	56,2	9,4	23,0	2.52.42,52				43,19	115,81		2.54.39,03	T.		
Dec.14	⊙ 1 L.....	20,7	35,1	49,7	4,6	19,2	33,9	48,7	17.24.4,56				5,39		1,57	17.26.3,99	T.		
	⊙ 2 L.....	42,7	57,0	11,8	26,6	41,4	55,9	10,7	17.26.26,59				27,42			17.28.26,02	T.		
	Neptune.....	58,7	11,9	25,7	39,0	52,7	6,1	19,9	22.49.39,15				39,95			22.51.38,91	T.		
	(b) α Pegasi.....	47,0	....	....	28,0	42,6	56,4	10,2	22.55.28,49				29,13	118,96			T.		
Dec.16	(c) ⊙ 1 L.....	8,3	23,0	37,1	52,2	7,0	21,6	36,4	17.32.52,23		+6,6		53,05		1,37	17.34.54,55	T.		
	⊙ 2 L.....	30,8	45,4	0,2	14,8	29,9	44,2	59,0	17.35.14,90				15,72			17.37.17,23	T.		
	α Aquilæ.....	54,1	7,8	21,7	....	....	....	....	19.41.35,08				35,70	121,63			T.		
	α Aquilæ B.....	24,8	38,1	....	43,2	....	....	....	19.41.35,21				35,71				T.		
Dec.23	⊙ 1 L.....	4,3	19,1	33,4	48,4	3,3	17,7	32,6	18.5.48,40			+14,6	49,15		1,57	18.5.59,54	T.		
	⊙ 2 L.....	....	41,7	56,3	10,9	26,0	40,5	55,3	18.8.11,10				11,85			18.8.22,25	T.		
	α Aquilæ.....	45,7	59,0	12,7	26,0	39,9	53,5	7,0	19.43.26,26				26,84	10,50		19.43.37,34	T.		
	(b) α Pegasi.....	35,2	48,9	2,7	16,5	30,7	44,4	58,4	22.57.16,69				17,25	10,74		22.57.27,96	T.		
	β Ceti.....	20,7	34,8	49,1	3,2	17,7	31,7	45,7	0.36.3,27				4,01	10,79		0.36.14,83	T.		
	(d) Metis.....	2,1	....	29,3	42,3	56,0	9,4	23,0	0.53.42,53				43,14			0.53.53,98	T.		
	Metis B.....	....	46,2	36,7	49,6	....	....	....	0.53.42,52				43,01			0.53.53,85	T.		
	Polaris.....	56,0	41,5	22,5	11,0	5,0	....	....	1.6.13,98				3,29				T.		
	Polaris M.....	54,5	39,0	25,0	11,0	52,0	39,0	24,0	1.6.12,12				1,43				T.		
	(e) Polaris M.....	11,5	....	....	....	....	....	9,0									T.		
Dec.24	(f) Sirius.....	48,1	1,7	15,8	29,6	44,1	57,7	11,9	6.58.29,85				30,60	12,83	1,56		T.		
Dec.27	(g) ⊙ 1 L.....	44,9	59,5	14,3	28,7	43,7	58,4	13,2	18.23.28,96	-4,3	+7,0	+12,1	29,29		1,42	18.23.45,96	C.		
	⊙ 2 L.....	7,1	21,9	36,4	51,2	6,1	20,6	35,4	18.25.51,24				51,57			18.26.8,24	C.		
	α Ceti.....	41,2	54,6	8,0	21,5	35,1	48,4	2,0	2.54.21,54				21,80	17,15		2.54.38,97	C.		
	(h) H. C. 7193.....	9,3	23,3	37,1	51,2	5,3	19,2	33,2	3.45.51,22				51,47			3.46.8,69	C.		
	Aldebaran.....	33,5	47,4	1,3	15,3	29,6	43,4	57,4	4.27.15,41				15,66	17,26		4.27.32,92	C.		
	(i) β Tauri.....	0,6	15,9	31,2	46,5	2,1	17,2	32,5	5.16.46,57				46,82	17,34		5.17.4,13	C.		
Dec.28	(k) ⊙ 1 L.....	10,3	24,8	39,4	54,1	....	....	38,3	18.27.54,21				54,54		1,43	18.28.12,61	C.		
	(b) α Arietis.....	54,2	....	23,3	37,8	52,4	7,0	21,5	1.58.37,84				38,11	18,47		1.58.56,63	C.		
	* N.P.D. 74°.53'	44,2	58,3	12,1	25,9	40,1	53,8	7,4	3.1.25,97				26,21			3.1.44,79	C.		
	* N.P.D. 74°.53'B	14,0	....	....	....	....	....	....	3.1.26,16				26,40			3.1.44,98	C.		
	(l) * N.P.D. 74°.38'	....	32,1	....	....	....	....	....	3.7.0,01				0,25			3.7.18,84	C.		
	* N.P.D. 74°.38'B	47,8	1,5	55,9	9,3	....	....	....	3.6.59,87				0,11			3.7.18,70	C.		
	(m) Irene B.....	8,2	23,3	18,7	33,0	....	....	....	3.45.22,05				22,30			3.45.40,92	C.		
	(n) Aldebaran.....	32,0	46,2	0,0	13,8	28,2	42,1	56,2	4.27.14,07				14,32	18,60		4.27.32,99	C.		
	Rigel.....	32,0	45,5	59,2	12,7	26,4	39,9	53,4	5.7.12,73				13,07	18,75		5.7.31,78	C.		
	(o) β Tauri.....	59,4	14,4	29,6	44,9	0,6	15,7	31,2	5.16.45,11				45,36	18,80		5.17.4,08	C.		
Dec.29	(p) ⊙ 1 L.....	34,7	49,3	4,0	18,7	33,4	48,1	2,7	18.32.18,70				19,03		1,41	18.32.38,57	T.		
	⊙ 2 L.....	56,8	11,6	26,2	41,0	55,7	10,3	25,1	18.34.40,95				41,28			18.35.0,82	T.		
	α Aquilæ.....	36,8	50,4	3,7	17,7	31,4	44,7	58,7	19.43.17,63				17,88	19,47		19.43.37,49	T.		
	(q) Euterpe B.....	31,7	....	40,1	53,3	....	....	....	2.49.43,88				44,00			2.50.4,03	T.		
	(r) α Ceti.....	38,2	51,4	5,2	18,5	32,2	45,5	59,1	2.54.18,59				18,84	20,08		2.54.38,87	T.		
	α Ceti B.....	8,9	22,3	....	....	....	....	....	2.54.18,74				18,87			2.54.38,90	T.		
	* N.P.D. 74°.53'	42,7	56,5	10,3	24,3	38,7	52,3	6,2	3.1.24,43				24,67			3.1.44,71	T.		
	* N.P.D. 74°.38'	16,5	30,7	44,7	58,6	12,7	26,4	40,4	3.6.58,58				58,82			3.7.18,86	T.		
	* N.P.D. 74°.38'B	46,5	0,1	54,4	8,3	....	....	....	3.6.58,57				58,69			3.7.18,73	T.		
	(s) Irene B.....	34,2	48,2	43,3	57,1	....	....	....	3.44.46,95				47,08			3.45.7,16	T.		
	Aldebaran.....	30,4	44,5	58,7	12,3	26,7	40,7	54,7	4.27.12,57				12,82	20,10		4.27.32,94	T.		
	Aldebaran B.....	0,2	14,0	9,0	22,5	....	....	....	4.27.12,68				12,81			4.27.32,93	T.		
	(t) Rigel.....	....	44,2	57,3	11,2	24,9	38,3	52,1	5.7.11,21				11,55	20,27		5.7.31,71	T.		
	β Tauri.....	57,8	13,2	28,4	43,7	59,2	14,3	29,7	5.16.43,75				44,00	20,17		5.17.4,17	T.		

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires, - 40",349, - 26",905, - 13",633, + 0",010, + 13",656, + 26",895, + 40",327.

Dec. 19, 2<sup>h</sup>, Hardy was put forward 2<sup>m</sup>.

(a) 'Good observation.' (b) Cloudy. (c) The image very bad in consequence of the shutter not being sufficiently open. (d) The counting was 1<sup>st</sup> fast, but has not been corrected. 'An equal object south-preceding,' which was probably the Planet. (e) At the intervals - 4' and + 4' from the middle wire. (f) Blazing. (g) Ragged and unsteady. Temp. in the Room, 32°,9. (h) A bright star near Irene, used for comparison the same night in the equatorial observations. Wire I was set down 24,3, not being taken from the clock. (i) Corrected by - 1". (k) Much clouded: wire VII quite uncertain. (l) Mist on the eye-piece prevented taking it at more wires. (m) Very uncertain. (n) Flaring excessively. (o) Wires VI and VII have been increased 1". (p) Great motion. (q) Extremely faint. (r) Bad definition. (s) A like object, south-following, was also observed. (t) Greatly diffused.

Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h. m. s.	
Dec.30	$\alpha$ Andromedæ ...	42,4	57,6	12,7	28,0	43,7	58,7	14,0	0. 0. 28,16	-4,3	+7,0	+12,1	28,42	21,18	1,36	0. 0. 49,65	T.
	(a) Polaris .....	27,0	11,5	...	52,0	34,0	24,0	...	1. 6. 1,06				46,22	21,28			T.
	$\alpha$ Arietis .....	51,3	5,7	20,2	34,7	49,7	4,1	18,7	1. 58. 34,91				35,17	21,38		1. 58. 56,51	T.
	Euterpe B. ....	46,2	0,2	54,7	8,3	...	...	...	2. 49. 58,59				58,71			2. 50. 20,10	T.
	$\alpha$ Ceti. ....	36,9	50,2	3,7	17,2	30,7	44,2	57,7	2. 54. 17,23				17,49	21,40		2. 54. 38,89	T.
	$\alpha$ Ceti B. ....	7,7	20,9	11,7	24,7	...	...	...	2. 54. 17,45				17,59			2. 54. 38,99	T.
	Irene. ....	31,7	...	...	...	...	...	55,3	3. 44. 13,48				13,73			3. 44. 35,17	T.
	Irene B. ....	0,9	14,7	10,0	23,6	...	...	...	3. 44. 13,55				13,68			3. 44. 35,12	T.
	H. C. 8249 .....	55,2	9,2	23,2	37,1	51,4	5,3	19,4	4. 15. 37,26				37,51			4. 15. 58,98	T.
	B.A.C. 1373 .....	16,1	30,7	45,0	59,6	14,0	28,3	42,8	4. 18. 59,50				59,75			4. 19. 21,23	T.
	H. C. 8468 .....	22,1	36,7	51,2	5,9	20,7	35,0	49,8	4. 22. 5,92				6,18			4. 22. 27,66	T.
	Aldebaran .....	29,2	43,0	57,3	11,2	25,4	39,2	53,2	4. 27. 11,21				11,46	21,46		4. 27. 32,94	T.
	Rigel .....	29,1	42,7	56,2	9,8	23,7	37,0	50,7	5. 7. 9,89				10,23	21,59		5. 7. 31,75	T.
	$\beta$ Tauri .....	56,7	11,7	27,1	42,4	57,8	13,1	28,3	5. 16. 42,44				42,69	21,48		5. 17. 4,22	T.
Dec.31	☉ 1 L. ....	23,7	38,2	52,8	7,3	22,3	36,7	51,4	18. 41. 7,49				7,82		1,37	18. 41. 30,11	T.
	(b) ☉ 2 L. ....	45,7	0,2	14,8	29,6	44,7	58,9	13,6	18. 43. 29,65				29,98			18. 43. 52,27	T.
	$\beta$ Ceti .....	9,2	23,3	37,5	51,7	6,0	20,0	34,3	0. 35. 51,71				52,06	22,64		0. 36. 14,69	T.
	$\alpha$ Arietis .....	49,7	4,3	18,7	33,7	48,3	2,7	17,3	1. 58. 33,53				33,79	22,75		1. 58. 56,49	T.
	Euterpe B. ....	2,2	...	11,4	25,1	...	...	...	2. 50. 15,08				15,20			2. 50. 37,95	T.
	$\alpha$ Ceti. ....	35,7	49,0	2,3	15,8	29,7	42,8	56,4	2. 54. 15,96				16,21	22,71		2. 54. 38,97	T.
	(c) Irene B. ....	29,0	43,2	38,2	51,8	...	...	...	3. 43. 41,80				41,93			3. 44. 4,73	T.
	Aldebaran .....	27,9	41,8	55,8	9,7	24,0	37,9	51,8	4. 27. 9,85				10,10	22,82		4. 27. 32,94	T.

ILLUMINATION WEST. INTERVALS for an Equatorial star from wires I, II, III, IV, V, VI, VII, to the mean of the seven wires,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) Clouds interrupted.

(b) Corrected by  $+1^s$  for error in counting.

(c) 'Pretty good, though very faint.'



MEAN RIGHT ASCENSIONS, JANUARY 1, 1853,

OF THE

FUNDAMENTAL STARS

OBSERVED IN THE YEAR 1853,

AS DEDUCED FROM EACH DAY'S OBSERVATION.

Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>α Andromedæ.</i>			<i>α Arietis.</i>			<i>Aldebaran continued.</i>			<i>α Orionis continued.</i>		
Feb. 16	+ 1,84	0. 0. 47,80	Jan. 18	+ 0,85	1. 58. 53,74	Dec. 28	- 3,54	4. 27. 29,45	May 5	+ 1,09	5. 47. 12,89
Mar. 12	+ 1,91	47,77	Feb. 2	+ 1,07	53,68	29	- 3,54	29,40	17	+ 1,14	12,82
Sept. 21	- 2,51	47,89	Mar. 11	+ 1,56	53,76	30	- 3,54	29,40	18	+ 1,44	12,86
Oct. 3	- 2,55	47,82	29	+ 1,67	53,75	31	- 3,54	29,40	21	+ 1,15	12,99
5	- 2,55	47,86	30	+ 1,67	53,68	<i>Rigel.</i>			24	+ 1,14	12,78
25	- 2,51	47,92	Oct. 20	- 2,84	53,75	Jan. 5 - 0,29 5. 7. 28,53			June 19	+ 0,96	12,91
28	- 2,50	47,88	28	- 2,91	53,72				28	+ 0,83	12,73
Nov. 3	- 2,45	47,87	Nov. 1	- 2,93	53,76	6	- 0,29	28,55	July 22	+ 0,36	12,98
8	- 2,41	47,84	8	- 2,97	53,63	8	- 0,29	28,54	<i>Sirius.</i>		
10	- 2,39	47,79	10	- 2,98	53,65	20	- 0,24	28,63	Jan. 14	- 0,59	6. 38. 40,28
17	- 2,33	47,80	16	- 3,00	53,74	22	- 0,22	28,46	21	- 0,59	40,25
18	- 2,32	47,81	Dec. 2	- 2,98	53,70	25	- 0,19	28,57	31	- 0,55	40,24
19	- 2,31	47,94	12	- 2,93	53,74	31	- 0,13	28,56	Feb. 1	- 0,54	40,22
Dec. 9	- 2,06	47,81	28	- 2,80	53,83	Feb. 2	- 0,10	28,64	2	- 0,53	40,35
12	- 2,02	47,79	30	- 2,77	53,74	16	+ 0,09	28,60	14	- 0,42	40,14
30	- 1,78	47,87	31	- 2,76	53,73	Mar. 22	+ 0,68	28,62	16	- 0,40	40,27
<i>β Ceti.</i>			<i>α Ceti.</i>			Apr. 27	+ 1,16	28,49	17	- 0,39	40,15
Oct. 1	- 2,65	0. 36. 12,54	Jan. 8	+ 0,36	2. 54. 35,98	June 19	+ 0,97	28,55	19	- 0,36	40,31
5	- 2,67	12,65	13	+ 0,41	36,03	Nov. 14	- 2,75	28,46	28	- 0,22	40,21
25	- 2,70	12,55	14	+ 0,43	35,97	16	- 2,79	28,59	Mar. 10	- 0,05	40,37
28	- 2,70	12,56	15	+ 0,44	35,99	Dec. 1	- 3,02	28,53	11	- 0,03	40,39
Nov. 8	- 2,65	12,65	22	+ 0,52	36,02	2	- 3,04	28,63	12	- 0,01	40,38
10	- 2,64	12,73	31	+ 0,64	36,11	28	- 3,25	28,53	May 18	+ 1,04	40,29
18	- 2,58	12,64	Oct. 25	- 2,72	36,00	29	- 3,25	28,46	19	+ 1,04	40,37
19	- 2,57	12,62	Nov. 1	- 2,80	36,02	30	- 3,25	28,50	21	+ 1,06	40,35
Dec. 23	- 2,23	12,60	16	- 2,93	36,06	<i>β Tauri.</i>			June 29	+ 1,01	40,51
31	- 2,13	12,56	17	- 2,94	35,98	Jan. 5 - 0,18 5. 17. 0,10			July 22	+ 0,68	40,17
<i>Polaris.</i>			18	- 2,95	36,13				Nov. 3	- 2,04	40,29
Mar. 11	+ 50,14	1. 5. 54,08	19	- 2,95	35,93	6	- 0,19	0,16	<i>Castor.</i>		
14	+ 51,16	55,79	Dec. 12	- 2,99	36,04	8	- 0,19	0,16	Jan. 8	- 0,40	7. 25. 12,84
15	+ 51,28	56,68	27	- 2,94	36,03	20	- 0,15	0,11	15	- 0,48	12,83
29	+ 54,25	54,16	29	- 2,92	35,96	21	- 0,15	0,14	20	- 0,53	12,83
29	+ 54,25	55,52	30	- 2,92	36,04	22	- 0,14	0,15	Feb. 14	- 0,52	12,93
30	+ 54,26	56,77	31	- 2,91	36,06	25	- 0,11	0,10	28	- 0,38	12,93
Apr. 17	+ 53,26	(48,62)	<i>Aldebaran.</i>			31	- 0,06	0,03	Mar. 11	- 0,22	12,78
20	+ 52,94	55,90	Jan. 8	- 0,02	4. 27. 29,44	Feb. 1	- 0,05	0,17	24	+ 0,01	12,82
May 4	+ 48,13	55,20	14	+ 0,01	29,44	2	- 0,03	0,06	Apr. 18	+ 0,49	12,74
4	+ 47,91	55,37	18	+ 0,05	29,31	17	+ 0,18	0,14	May 17	+ 0,89	12,84
5	+ 47,66	55,40	20	+ 0,06	29,41	19	+ 0,21	0,16	18	+ 0,90	12,77
10	+ 44,54	55,31	21	+ 0,07	29,44	28	+ 0,37	0,17	<i>Procyon.</i>		
11	+ 44,26	56,56	22	+ 0,08	29,43	Mar. 15	+ 0,67	0,11	Jan. 8	- 0,36	7. 31. 36,37
16	+ 41,82	55,73	25	+ 0,11	29,41	22	+ 0,80	0,01	15	- 0,43	36,34
16	+ 41,58	55,63	Feb. 2	+ 0,21	29,39	July 22	+ 0,27	0,15	20	- 0,47	36,41
Sept. 23	- 46,35	53,96	28	+ 0,62	29,33	Dec. 1	- 3,69	0,06	21	- 0,48	36,39
26	- 47,05	53,69	Mar. 15	+ 0,87	29,44	2	- 3,71	0,16	28	- 0,47	36,32
Oct. 3	- 47,91	54,61	Apr. 18	+ 1,31	29,40	9	- 3,82	0,07	17	- 0,45	36,41
3	- 48,01	54,66	20	+ 1,32	29,33	27	- 4,02	0,11	28	- 0,35	36,33
10	- 49,00	57,94	May 16	+ 1,33	29,44	28	- 4,02	0,06	Mar. 11	- 0,21	36,38
17	- 48,77	56,79	17	+ 1,33	29,47	29	- 4,03	0,14	14	- 0,17	36,39
20	- 48,85	57,29	18	+ 1,32	29,36	30	- 4,03	0,19	15	- 0,15	36,32
21	- 48,81	58,07	Nov. 1	- 2,87	29,44	<i>α Orionis.</i>			24	- 0,01	36,35
25	- 48,28	53,97	3	- 2,91	29,36	Jan. 6	- 0,27	5. 47. 12,90	26	+ 0,02	36,33
25	- 48,15	53,79	8	- 3,01	29,45	18	- 0,27	12,90	30	+ 0,09	36,41
28	- 47,49	54,20	14	- 3,12	29,49	20	- 0,27	12,83	Apr. 1	+ 0,12	36,41
30	- 46,97	54,68	16	- 3,15	29,23	Feb. 1	- 0,20	12,92	17	+ 0,40	36,42
31	- 46,83	55,17	17	- 3,17	29,39	14	- 0,06	12,83	May 18	+ 0,75	36,36
Nov. 1	- 46,76	54,69	18	- 3,19	29,29	17	- 0,02	12,94	18	+ 0,76	36,37
1	- 46,70	56,06	19	- 3,20	29,29	Mar. 11	+ 0,33	12,93	June 17	+ 0,86	36,41
			Dec. 1	- 3,36	29,42	Apr. 27	+ 1,03	12,81	29	+ 0,81	36,30
			2	- 3,38	29,46				Aug. 23	- 0,01	36,46
			27	- 3,54	29,38						



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
Pollux.			Regulus continued.			$\beta$ Corvi continued.			$\epsilon$ Bootis continued.		
Jan. 15	-0,46	7.36.18,85	Apr. 1	-0,63	10.0.32,43	Apr. 1	-0,98	12.26.40,44	May 10	-1,46	14.38.34,08
20	-0,52	18,80	5	-0,59	32,31	7	-1,00	40,66	11	-1,46	34,06
21	-0,53	18,86	7	-0,56	32,27	26	-0,99	40,53	13	-1,46	34,02
Feb. 14	-0,54	18,95	13	-0,50	32,34	27	-0,99	40,57	19	-1,48	33,98
17	-0,52	18,93	14	-0,49	32,41	30	-0,98	40,48	24	-1,48	34,07
28	-0,41	18,89	27	-0,33	32,35	May 4	-0,96	40,55	June 13	-1,41	34,07
Mar. 11	-0,26	18,75	30	-0,29	32,36	5	-0,96	40,41	14	-1,40	34,01
14	-0,22	18,92	May 5	-0,23	32,47	7	-0,94	40,52	16	-1,39	34,07
15	-0,20	18,74	7	-0,20	32,41	10	-0,93	40,41	29	-1,28	33,94
24	-0,04	18,83	11	-0,15	32,38	11	-0,92	40,40	$\alpha^s$ Libræ.		
26	-0,01	18,82	18	-0,07	32,44	13	-0,91	40,59	Apr. 26	-1,17	14.42.45,26
30	+0,06	18,93	19	-0,05	32,34	14	-0,90	40,41	27	-1,18	45,40
Apr. 1	+0,10	18,74	July 25	+0,35	32,26	16	-0,88	40,57	30	-1,21	44,39
18	+0,41	18,86	$\delta$ Leonis.			17	-0,88	40,59	May 4	-1,24	45,28
May 16	+0,80	18,80	Feb. 28	-0,84	11.6.17,10	20	-0,86	40,52	7	-1,27	45,23
17	+0,81	18,85	Mar. 8	-0,90	17,21	21	-0,85	40,49	10	-1,29	45,33
18	+0,82	18,83	10	-0,91	17,14	Spica.			11	-1,30	45,36
Aug. 23	-0,07	18,74	14	-0,92	16,98	Apr. 7	-0,97	13.17.27,37	13	-1,31	45,29
$\epsilon$ Hydræ.			18	-0,93	17,11	13	-1,02	27,36	19	-1,34	45,33
Jan. 31	-0,58	8.38.59,45	29	-0,93	16,99	14	-1,03	27,23	20	-1,35	45,31
Feb. 16	-0,63	59,35	Apr. 5	-0,90	16,92	26	-1,07	27,32	21	-1,35	45,30
17	-0,63	59,32	7	-0,88	16,99	27	-1,07	27,43	24	-1,36	45,43
19	-0,63	59,31	12	-0,85	17,14	May 4	-1,08	27,24	June 13	-1,37	45,30
28	-0,59	59,31	20	-0,79	17,14	10	-1,08	27,28	14	-1,37	45,25
Mar. 8	-0,53	59,27	26	-0,73	17,11	13	-1,07	27,28	17	-1,36	45,29
10	-0,52	59,32	27	-0,73	17,05	16	-1,06	27,27	$\alpha$ Coronæ.		
18	-0,43	59,37	30	-0,70	17,10	17	-1,06	27,33	May 4	-1,43	15.28.27,80
23	-0,37	59,39	May 4	-0,66	17,12	18	-1,06	27,36	5	-1,44	27,83
Apr. 1	-0,25	59,41	5	-0,65	17,09	19	-1,06	27,33	7	-1,46	27,91
5	-0,19	59,45	7	-0,62	17,11	20	-1,05	27,30	10	-1,49	27,93
8	-0,14	59,42	10	-0,59	17,08	21	-1,05	27,25	11	-1,50	27,85
30	+0,18	59,36	14	-0,54	17,05	24	-1,04	27,25	14	-1,52	27,93
May 5	+0,24	59,38	17	-0,51	17,08	25	-1,03	27,38	25	-1,59	27,93
18	+0,40	59,31	19	-0,48	17,01	June 15	-0,91	27,27	June 29	-1,53	27,83
$\alpha$ Hydræ.			$\beta$ Leonis.			Aug. 29	-0,15	27,31	July 6	-1,47	27,87
Mar. 8	-0,66	9.20.21,84	Mar. 12	-0,88	11.41.33,50	Arcturus.			Oct. 20	+0,09	27,86
10	-0,65	21,81	24	-0,93	33,55	Apr. 13	-1,13	14.8.57,43	22	+0,10	27,93
23	-0,55	21,75	26	-0,93	33,65	14	-1,14	57,47	Nov. 1	+0,13	27,95
24	-0,54	21,90	29	-0,94	33,59	27	-1,24	57,44	$\alpha$ Serpentis.		
29	-0,48	22,00	30	-0,94	33,56	May 16	-1,29	57,49	Apr. 26	-1,13	15.37.1,87
30	-0,46	21,86	Apr. 5	-0,93	33,58	19	-1,29	57,46	May 4	-1,24	1,93
Apr. 7	-0,36	21,92	7	-0,93	33,52	June 14	-1,18	57,55	7	-1,27	1,73
8	-0,35	21,80	12	-0,91	33,41	15	-1,17	57,48	11	-1,32	1,76
12	-0,30	21,95	20	-0,87	33,69	17	-1,16	57,49	14	-1,35	1,84
20	-0,18	21,79	26	-0,83	33,47	20	-1,14	57,43	25	-1,44	1,71
May 11	+0,11	21,94	30	-0,81	33,55	29	-1,06	57,45	June 29	-1,49	1,86
18	+0,19	21,92	May 4	-0,78	33,55	Oct. 3	+0,06	57,41	July 6	-1,45	1,82
Regulus.			5	-0,77	33,52	18	+0,08	57,31	25	-1,29	1,80
Feb. 17	-0,71	10.0.32,28	7	-0,75	33,55	20	+0,07	57,41	Oct. 20	-0,20	1,69
19	-0,72	32,33	11	-0,72	33,49	22	+0,06	57,45	22	-0,20	1,80
Mar. 15	-0,74	32,49	14	-0,69	33,56	31	0,00	57,40	Dec. 8	-0,56	1,87
22	-0,71	32,41	16	-0,67	33,50	$\epsilon$ Bootis.			$\delta$ Ophiuchi.		
23	-0,70	32,42	17	-0,66	33,53	Apr. 26	-1,37	14.38.34,04	Apr. 26	-1,05	16.6.38,85
24	-0,69	32,34	18	-0,65	33,52	27	-1,37	33,88	27	-1,06	38,88
29	-0,65	32,40	June 14	-0,38	33,64	30	-1,40	33,96	$\beta$ Corvi.		
30	-0,65	32,31	15	-0,36	33,54	May 4	-1,43	33,98	Mar. 18	-0,88	12.26.40,53
						7	-1,44	34,03	29	-0,96	40,44

Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1853.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
$\delta$ Ophiuchi <i>continued.</i>			$\beta$ Lyrae.			$\alpha$ Aquilae <i>continued.</i>			$\alpha^2$ Capricorni <i>continued.</i>		
May 4	-1,19	16. 6. 38,83	June 16	-1,81	18. 44. 39,29	July 30	-2,10	19. 43. 36,65	Sept. 24	-2,01	20. 9. 53,81
11	-1,29	38,79	21	-1,88	39,16	Aug. 2	-2,11	36,58	Oct. 3	-1,88	53,75
14	-1,33	38,84	July 26	-2,04	38,98	4	-2,11	36,70	7	-1,82	53,81
19	-1,39	38,77	30	-2,02	39,16	6	-2,11	36,63	18	-1,65	53,83
25	-1,46	38,75	Aug. 6	-1,96	39,27	8	-2,12	36,61	$\beta$ Aquarii.		
July 1	-1,62	38,86	8	-1,95	39,23	10	-2,12	36,63	July 25	-2,06	21. 23. 49,19
6	-1,60	38,69	10	-1,93	39,23	11	-2,11	36,68	Aug. 24	-2,34	49,13
Antares.			13	-1,89	39,30	12	-2,11	36,65	Sept. 23	-2,24	49,11
May 19	-1,53	16. 20. 24,15	27	-1,68	39,16	13	-2,10	36,56	24	-2,24	49,22
20	-1,54	24,22	Oct. 18	-0,55	39,23	20	-2,07	36,65	Oct. 1	-2,17	49,14
June 16	-1,82	23,87	$\zeta$ Aquilae.			24	-2,04	36,74	3	-2,14	49,15
17	-1,82	24,07	July 6	-1,90	18. 58. 39,31	27	-2,02	36,59	7	-2,10	49,04
July 6	-1,85	24,12	19	-1,99	39,30	29	-2,01	36,66	18	-1,96	49,23
Aug. 9	-1,56	24,25	26	-2,00	39,09	Sept. 22	-1,72	36,65	22	-1,90	49,16
$\alpha$ Herculis.			30	-2,00	39,33	23	-1,70	36,77	25	-1,86	49,17
Jan. 12	+1,93	17. 7. 56,70	Aug. 6	-1,98	39,25	24	-1,68	36,72	Nov. 1	-1,76	49,09
17	+1,81	56,89	9	-1,97	39,28	Oct. 3	-1,53	36,78	16	-1,55	49,30
June 16	-1,71	56,80	10	-1,96	39,29	Dec. 23	-0,68	36,66	$\alpha$ Aquarii.		
17	-1,72	56,80	Sept. 21	-1,43	39,16	29	-0,69	36,80	Mar. 25	+1,36	21. 58. 13,98
30	-1,77	56,72	22	-1,41	39,17	$\beta$ Aquilae.			Aug. 13	-2,21	14,02
July 1	-1,77	56,83	23	-1,39	39,32	July 12	-1,95	19. 48. 5,53	20	-2,29	13,97
26	-1,68	56,67	30	-1,26	39,37	19	-2,02	5,62	27	-2,32	13,98
Aug. 2	-1,62	56,80	Oct. 18	-0,94	39,28	22	-2,04	5,63	Sept. 24	-2,28	13,97
8	-1,55	56,78	$\gamma$ Aquilae.			25	-2,06	5,66	Oct. 1	-2,23	14,02
20	-1,39	56,81	July 12	-1,95	19. 39. 16,38	Aug. 2	-2,10	5,63	3	-2,21	13,97
$\alpha$ Ophiuchi.			19	-2,01	16,29	4	-2,10	5,60	7	-2,18	14,10
Jan. 12	+2,01	17. 28. 6,87	30	-2,07	16,23	6	-2,10	5,58	22	-2,01	13,94
May 17	-1,29	6,72	Aug. 2	-2,07	16,33	8	-2,11	5,53	25	-1,98	13,90
18	-1,31	6,73	4	-2,07	16,28	9	-2,11	5,66	Nov. 1	-1,89	13,95
June 13	-1,69	6,71	6	-2,07	16,26	10	-2,11	5,55	$\alpha$ Pegasi.		
21	-1,76	6,79	9	-2,07	16,16	11	-2,11	5,60	Jan. 5	+1,65	22. 57. 26,55
30	-1,81	6,81	12	-2,06	16,26	12	-2,10	5,63	Aug. 11	-2,05	26,40
July 1	-1,81	6,78	27	-1,98	16,36	13	-2,10	5,56	Sept. 21	-2,37	26,55
Aug. 8	-1,65	6,86	29	-1,96	16,35	24	-2,05	5,56	23	-2,37	26,41
9	-1,64	6,80	Sept. 23	-1,63	16,35	27	-2,03	5,60	24	-2,36	26,46
Sept. 30	-0,80	6,70	24	-1,61	16,20	29	-2,02	5,52	Oct. 1	-2,35	26,55
Dec. 9	-0,31	6,76	30	-1,52	16,14	Sept. 22	-1,73	5,60	3	-2,34	26,46
$\mu^1$ Sagittarii.			Oct. 3	-1,46	16,29	23	-1,71	5,58	5	-2,33	26,36
June 21	-1,94	18. 4. 58,49	18	-1,21	16,16	30	-1,61	5,62	18	-2,25	26,51
July 1	-2,06	58,37	20	-1,18	16,34	Oct. 18	-1,31	5,64	20	-2,23	26,55
19	-2,15	58,44	$\alpha$ Aquilae.			22	-1,28	5,57	Nov. 8	-2,04	26,49
Aug. 8	-2,09	58,49	Jan. 19	+2,12	19. 43. 36,64	22	-1,25	5,56	14	-1,97	26,48
9	-2,08	58,42	21	+2,10	36,71	$\alpha^2$ Capricorni.			17	-1,93	26,54
10	-2,07	58,45	June 30	-1,81	36,60	July 22	-2,19	20. 9. 53,75	18	-1,92	26,39
20	-1,97	58,53	July 12	-1,97	36,61	30	-2,27	53,79	19	-1,90	26,51
			19	-2,04	36,63	Aug. 4	-2,30	53,76	Dec. 1	-1,75	26,57
			22	-2,06	36,70	9	-2,32	53,76	2	-1,74	26,42
			25	-2,08	36,64	11	-2,32	53,88	12	-1,62	26,51
						Sept. 21	-2,05	53,80	23	-1,50	26,46
						22	-2,04	53,85			
						23	-2,02	53,70			



MEAN RIGHT ASCENSIONS, JAN. 1, 1853,

OF STARS

OBSERVED IN THE YEAR 1853,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND

A CATALOGUE

OF

CONCLUDED MEAN RIGHT ASCENSIONS,

JANUARY 1, 1853;

WITH THE ANNUAL VARIATIONS.

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
1	$\alpha$ ANDROMEDÆ ....					61.43	16	0. 0. 47,84	+ 3,073	
2	B. (w.) o. 65.....	Nov. 18	8.9	-2,37		95.53	1	0. 4. 4,58	3,068	
3	H. C. 134.....	10	8	-2,42		89.26	1	0. 6. 15,89	3,071	
4	B. (w.) o. 132.....	18	9.10	-2,37		90.42	1	0. 8. 12,14	3,070	
5	B. (w.) o. 224.....	3	8	-2,48	10,74					
6		19	8	-2,38	10,90	87.22	2	0. 13. 10,82	3,074	
7	H. C. 469.....	3	8	-2,50	44,72					
8		8	8	-2,48	44,79	89.15	3	0. 16. 44,76	3,072	
9		19	8	-2,40	44,78					
10	11 Ceti.....	Dec. 12	7.8	-2,23		91.56	1	0. 22. 22,80	3,066	No. 10. This R.A. agrees with that derived from two observations in 1849. The R.A. by B.A.C. is 0,44 greater.
11	B. (w.) o. 390.....	Nov. 19	10	-2,43		84.56	1	0. 23. 39,62	3,083	
12	B. (w.) o. 425.....	Dec. 12	9	-2,24		91.15	1	0. 25. 18,01	3,067	
13	B.A.C. 132.....	Nov. 18	7.8	-2,46		91.25	1	0. 25. 57,95	3,067	
14	B. (w.) o. 450.....	19	7.8	-2,44		84.51	1	0. 26. 33,99	3,085	
15	B. (w.) o. 492.....	18	8.9	-2,47		91.24	1	0. 28. 52,95	3,067	
16	B. (w.) o. 506.....	Dec. 12	9.10	-2,26		85.47	1	0. 29. 46,68	3,083	
17	B. (w.) o. 512.....	Nov. 19	10	-2,46		81.36	1	0. 30. 29,63	3,097	
18	B. (w.) o. 571.....	19		-2,48		86. 2	1	0. 33. 23,89	3,084	
19	H. C. 1083.....	Dec. 12	8.9	-2,29		92.19	1	0. 33. 40,02	3,063	
20	B. (w.) o. 590.....	Nov. 16	10	-2,50		81.37	1	0. 34. 18,73	3,100	
21	$\beta$ CETI.....					108.48	10	0. 36. 12,61	2,999	
22	B. (w.) o. 635.....	Dec. 12	9	-2,30		83. 2	1	0. 36. 43,74	3,097	
23	B. (w.) o. 657.....	Nov. 16	8	-2,52		82.57	1	0. 38. 3,98	3,098	
24	B. (w.) o. 686.....	Dec. 12	9	-2,32		82.10	1	0. 39. 36,41	3,102	
25	B. (w.) o. 738.....	Nov. 16	10	-2,54		80.56	1	0. 42. 41,84	3,110	
26	B. (w.) o. 800.....	16	10	-2,55		85.48	1	0. 45. 44,02	3,090	
27	B. (w.) o. 943.....	10	8	-2,61		83.29	1	0. 54. 2,30	3,106	
28	B. (w.) o. 997.....	10	8	-2,63		81.12	1	0. 56. 58,35	3,122	
29	B. (w.) o. 1049.....	10	7	-2,64		79.14	1	0. 59. 20,99	3,136	
30	B. (w.) I. 23.....	10	8 $\frac{1}{4}$	-2,65		83.16	1	1. 2. 53,30	3,113	
31	B. (w.) I. 68.....	9	8	-2,65		89.42	1	1. 5. 29,43	3,073	
32	POLARIS.....					1.28	29	1. 5. 55,44	17,901	
33	H. C. 2248.....	8	8	-2,67		83.49	1	1. 7. 54,60	3,113	
34	B. (w.) I. 133.....	9	10	-2,71		80.53	1	1. 9. 17,28	3,135	
35	B. (w.) I. 157.....	Dec. 2	8 $\frac{1}{2}$	-2,58		86.36	1	1. 10. 52,19	3,095	No. 35. B. (w.) I. 160 was at the same time considered to be of Mag. 8.
36	B. (w.) I. 160.....	Nov. 8	8.9	-2,67		86.40	1	1. 11. 5,65	3,094	
37	H. C. 2456.....	8	8.9	-2,71		78. 6	1	1. 14. 27,53	3,161	
38	B.A.C. 410.....	Dec. 2	6.7	-2,60		83.22	1	1. 15. 16,02	3,121	
39	B. (w.) I. 275.....	Nov. 8	10	-2,69		85.35	1	1. 17. 9,57	3,105	
40	96 Piscium.....	8	6.7	-2,71		83.28	1	1. 21. 23,02	3,124	
41	$\mu$ Piscium.....	Dec. 2	4.5	-2,64		84.37	1	1. 22. 29,25	3,115	
42	B. (w.) I. 410.....	Nov. 8	8.9	-2,73		80.46	1	1. 24. 9,45	3,149	
43	B. (w.) I. 480.....	8	10	-2,73	49,20					
44		Dec. 2	9.10	-2,67	49,46	82.57	2	1. 27. 49,33	3,133	
45	B. (w.) I. 540.....	2		-2,67		86.38	1	1. 31. 20,41	3,101	
46	B.A.C. 511.....	Nov. 8	6.7	-2,77		81.59	1	1. 32. 50,74	3,145	
47	B. (w.) I. 757.....	Dec. 2	9	-2,79		75.32	1	1. 42. 35,13	3,220	
48	H. C. 3386.....	Nov. 8	8	-2,77		84.43	1	1. 43. 16,28	3,125	
49	B. (w.) I. 801.....	Jan. 18	9 $\frac{1}{4}$	+0,85		81. 8	1	1. 44. 52,47	3,163	
50	B. (w.) I. 969.....	Dec. 2	8.9	-2,83		78.32	1	1. 54. 13,89	3,200	
51	$\alpha$ ARIETIS.....					67.14	16	1. 58. 53,72	3,349	
52	H. C. 4363.....	Nov. 16	8	-2,88		82.55	1	2. 13. 45,71	3,162	
53	B. (w.) II. 271.....	16	10	-2,93		77.16	1	2. 17. 10,73	3,241	
54	B. (w.) II. 359.....	16	7.8	-2,91		81.39	1	2. 21. 45,91	3,185	
55	B.A.C. 782.....	16	7	-3,02		71.46	1	2. 25. 23,94	3,332	
56	H. C. 5157.....	Jan. 14	9	+0,55		73.24	1	2. 39. 14,43	3,326	
57	B. (w.) II. 746.....	14	9.10	+0,52		77. 7	1	2. 43. 26,50	3,271	
58	B. (w.) II. 789.....	14	8.9	+0,51		76.23	1	2. 45. 52,34	3,285	
59	H. C. 5456.....	14	7 $\frac{3}{4}$	+0,50		72.47	1	2. 49. 40,12	3,350	
60	$\alpha$ CETI.....					86.29	17	2. 54. 36,02	3,127	
61	*.....	Dec. 28		-3,10	41,71					
62		29		-3,10	41,61	74.53	2	3. 1. 41,66	3,328	
63	*.....	28		-3,14	15,58					
64		29		-3,13	15,68	74.38	2	3. 7. 15,63	3,339	
65	H. C. 7193.....	27		-3,36		73.49	1	3. 46. 5,33	3,394	No. 65. The seconds of R.A. by H. C. are 4,25. No. 66. The seconds of H. C. are 9,75.
66	H. C. 7767.....	Jan. 21	8 $\frac{1}{4}$	+0,20		65.49	1	4. 3. 11,02	3,595	
67	H. C. 7904.....	21	8	+0,19		66.18	1	4. 6. 35,32	3,587	
68	H. C. 7999.....	21	8	+0,17		67.33	1	4. 9. 29,88	3,560	
69	H. C. 8001.....	Feb. 16	8 $\frac{1}{2}$	+0,56		65.22	1	4. 9. 34,86	+ 3,614	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
70	H. C. 8122.....	Jan. 21	8 $\frac{1}{4}$	+ 0,15		72. 5	1	4. 12. 54,47	+ 3,457	
71	H. C. 8249.....	18	7.8	+ 0,10	55,38	73. 16	2	4. 15. 55,43	3,432	Nos. 71 and 72. The R.A. by H. C. is 0,64 greater.
72	—	Dec. 30	7.8	- 3,50	55,48					
73	$\kappa^1$ Tauri.....	Jan. 21	4.5	+ 0,14		68. 3	1	4. 16. 36,92	3,556	
74	B. (w.) iv. 356....	Feb. 16	7 $\frac{3}{4}$	+ 0,47		74. 49	1	4. 17. 43,97	3,398	
75	H. C. 8362.....	Jan. 18	8 $\frac{1}{4}$	+ 0,03		74. 45	1	4. 19. 13,66	3,400	
76	B.A.C. 1373.....	Dec. 30	6	- 3,61		68. 43	1	4. 19. 17,62	3,542	
77	$\epsilon$ Tauri.....	Jan. 21	3.4	+ 0,11		71. 9	1	4. 20. 2,34	3,484	
78	B.A.C. 1388.....	Feb. 15	8	+ 0,45	40,81	70. 29	2	4. 21. 40,85	3,502	
79	—	16	7.8	+ 0,46	40,89					
80	81 Tauri.....	Jan. 18	6	+ 0,07		74. 38	1	4. 22. 15,90	3,405	
81	H. C. 8468.....	Dec. 30	7 $\frac{1}{4}$	- 3,66		66. 58	1	4. 22. 24,00	3,588	
82	H. C. 8546.....	Jan. 21	8.9	+ 0,10	35,85	66. 2	2	4. 24. 35,85	3,614	Nos. 82 and 83. See the Note to No. 54 in page 48.
83	—	Feb. 16	8	+ 0,46	35,84					
84	ALDEBARAN.....					73. 47	30	4. 27. 29,40	3,428	
85	H. C. 8798.....	Jan. 21	8.9	+ 0,06		69. 22	1	4. 32. 40,04	3,538	
86	H. C. 8826.....	Nov. 1	8 $\frac{1}{2}$	- 2,84		74. 19	1	4. 33. 46,05	3,420	No. 85. The R.A. is less than that of H. C. by about 1".
87	H. C. 8917.....	Jan. 21	7 $\frac{3}{4}$	+ 0,03		64. 14	1	4. 37. 10,53	3,674	
88	H. C. 9008.....	21	8	+ 0,02		68. 57	1	4. 40. 0,26	3,554	
89	$\delta$ Tauri.....	21	5.6	+ 0,01		71. 25	1	4. 42. 46,81	3,495	
90	H. C. 9220.....	21	8.9	- 0,01		66. 14	1	4. 47. 12,32	3,630	
91	H. C. 9331.....	21	9	- 0,03		66. 28	1	4. 50. 38,70	3,626	
92	H. C. 9411.....	21	8	- 0,04		74. 28	1	4. 52. 56,37	3,427	
93	H. C. 9409.....	Feb. 17	8	+ 0,30		69. 23	1	4. 53. 1,63	3,552	
94	H. C. 9517.....	Jan. 21	8.9	- 0,05		71. 57	1	4. 56. 16,27	3,490	
95	B.A.C. 1562.....	Feb. 17	7.8	+ 0,30		63. 47	1	4. 56. 47,69	3,704	
96	B.A.C. 1577.....	Jan. 21	8.9	- 0,07		61. 55	1	4. 59. 21,65	3,759	
97	H. C. 9625.....	Feb. 17	9	+ 0,26		73. 13	1	4. 59. 28,39	3,460	
98	H. C. 9704.....	Jan. 21	9.10	- 0,09		61. 12	1	5. 2. 4,56	3,782	No. 98. By comparison with an observation on Feb. 1, 1851, this R.A. is 1" too great. The seconds of H. C. are 2",85.
99	H. C. 9786.....	21	9.10	- 0,09		64. 15	1	5. 5. 26,56	3,697	
100	RIGEL.....					98. 23	19	5. 7. 28,55	2,879	
101	H. C. 9887.....	21	10	- 0,11		68. 22	1	5. 9. 43,32	3,588	
102	H. C. 9941.....	Feb. 17	8	+ 0,19		71. 57	1	5. 11. 23,23	3,497	
103	H. C. 10013.....	17	8	+ 0,20		61. 41	1	5. 13. 45,24	3,776	
104	$\beta$ TAURI.....					61. 31	23	5. 17. 0,12	3,783	
105	H. C. 10252.....	17	8	+ 0,14		73. 42	1	5. 20. 21,26	3,456	
106	H. C. 10247.....	19	9	+ 0,19		63. 11	1	5. 20. 33,45	3,736	
107	H. C. 10397.....	17	8.9	+ 0,12	41,78	74. 9	2	5. 24. 41,78	3,446	
108	—	19	8 $\frac{1}{4}$	+ 0,15	41,77					
109	H. C. 10528.....	19	8 $\frac{1}{4}$	+ 0,14		63. 53	1	5. 28. 32,19	3,720	
110	H. C. 10679.....	19	9	+ 0,12		63. 49	1	5. 32. 44,35	3,723	No. 110. The R.A. of H. C. is about 1" less.
111	H. C. 10829.....	17	8	+ 0,06		64. 57	1	5. 36. 29,58	3,692	
112	H. C. 10932.....	17	8	+ 0,05		69. 0	1	5. 39. 18,08	3,582	
113	H. C. 10975.....	18	7.8	+ 0,06		62. 30	1	5. 40. 24,28	3,764	
114	H. C. 11041.....	Feb. 14	8 $\frac{1}{2}$	- 0,01		72. 1	1	5. 41. 56,87	3,503	
115	H. C. 11070.....	17	8	+ 0,02	10,74					
116	—	18	8	+ 0,04	10,77	70. 31	2	5. 43. 10,76	3,542	
117	B.A.C. 1867.....	14	7	- 0,02		69. 44	1	5. 44. 34,92	3,563	
118	$\alpha$ ORIONIS.....					82. 37	16	5. 47. 12,88	3,244	
119	H. C. 11349.....	14	9.10	- 0,07	18,54	67. 28	2	5. 52. 18,52	3,625	
120	—	Mar. 1	9	+ 0,17	18,49					
121	H. C. 11466.....	1	8	+ 0,14		71. 18	1	5. 55. 43,39	3,523	
122	H. C. 11584.....	1	8	+ 0,12		73. 16	1	5. 58. 46,97	3,473	
123	H. C. 11699.....	1	9.10	+ 0,11		61. 12	1	6. 2. 20,86	3,806	
124	H. C. 11839.....	Feb. 14	7.8	- 0,13		72. 3	1	6. 5. 53,44	3,504	
125	$\gamma^2$ ORIONIS.....	Mar. 1	6 $\frac{1}{2}$	+ 0,08		73. 49	1	6. 6. 56,57	3,458	
126	H. C. 11930.....	Feb. 14	8.9	- 0,15		67. 48	1	6. 8. 28,70	3,616	
127	H. C. 12053.....	14	8.9	- 0,16		68. 51	1	6. 11. 44,49	3,587	
128	H. C. 12166.....	14	8	- 0,18		72. 32	1	6. 14. 46,72	3,490	
129	H. C. 12262.....	14	7.8	- 0,19	33,13					
130	—	Mar. 12	7.8	+ 0,21	33,26	71. 9	2	6. 17. 33,20	3,526	
131	H. C. 12348.....	Feb. 14	8	- 0,21	56,65	62. 53	2	6. 19. 56,69	3,753	
132	—	Mar. 12	9	+ 0,20	56,72					
133	H. C. 12483.....	Feb. 14	8.9	- 0,23	49,24	61. 49	2	6. 23. 49,27	3,783	
134	—	Mar. 12	8	+ 0,18	49,30					
135	B.A.C. 2154.....	Feb. 16	7	- 0,22	26,56					
136	—	23	7.8	- 0,13	26,48	65. 18	3	6. 28. 26,50	3,681	
137	—	Mar. 12	7	+ 0,15	26,46					
138	H. C. 12700.....	1	10	- 0,05		65. 20	1	6. 29. 58,26	+ 3,679	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
139	B.A.C. 2173.....	Feb. 14	7.8	-0.25	20.91					
140	—————	16	8	-0.23	21.01	70.13	3	6.31.20.96	+3,547	
141	—————	Mar. 12	8.9	+0.13	20.96					
142	B.A.C. 2184.....	Feb. 23	7	-0.15	52.98	73.28	2	6.32.52.89	3,463	
143	—————	Mar. 1	7	-0.06	52.80					
144	H. C. 12875.....	12	8½	+0.11		71.54	1	6.34.34.27	3,503	
145	H. C. 12925.....	Feb. 16	8¼	-0.25		67.1	1	6.36.3.26	3,631	No. 145. On the same day an attempt was made to observe H. C. 13132, but no star was visible. If the N.P.D. of H. C. be increased 10', the place agrees with that of B. z. 346, 6h.39m.44s.
146	H. C. 12932.....	14	8¼	-0.28	10.41					
147	—————	Mar. 1	8½	-0.08	10.41	67.4	2	6.36.10.41	3,629	
148	SIRIUS.....					106.31	19	6.38.40.29	3,461	
149	H. C. 13125.....	11	9	+0.05		64.4	1	6.41.54.89	3,710	
150	B.A.C. 2243.....	Feb. 14	8	-0.32	3.25					
151	—————	17	8	-0.29	3.26	64.31	3	6.44.3.26	3,696	
152	—————	Mar. 11	8	+0.04	3.28					
153	H. C. 13301.....	1	8	-0.13		72.8	1	6.46.6.29	3,493	
154	B.A.C. 2265.....	Feb. 14	7.8	-0.32	43.41					
155	—————	17	7	-0.29	43.44	72.5	3	6.47.43.40	3,494	
156	—————	Mar. 11	8	+0.02	43.36					
157	H. C. 13420.....	Feb. 16	9.10	-0.32	24.40	65.5	2	6.49.24.26	3,677	
158	—————	Mar. 1	10	-0.15	24.12					
159	B.A.C. 2280.....	11	8	0.00		73.52	1	6.51.23.98	3,448	
160	H. C. 13526.....	Feb. 16	8¾	-0.34		63.13	1	6.52.28.71	3,728	
161	ω Geminorum.....	Mar. 1	9	-0.17		65.35	1	6.53.26.81	3,661	No. 161. The star was obscured by cloud.
162	H. C. 13570.....	11	8.9	-0.02		72.10	1	6.53.45.20	3,489	
163	H. C. 13688.....	Feb. 14	8.9	-0.36	56.31					
164	—————	28	8.9	-0.20	56.39	68.47	4	6.56.56.36	3,574	
165	—————	Mar. 11	8.9	-0.04	56.35					
166	—————	15	8	+0.03	56.37					
167	H. C. 13788.....	11	8.9	-0.05		67.50	1	6.59.48.07	3,597	
168	*.....	Feb. 14	8.9	-0.37		70.42	1	7.0.24.33	3,523	No. 168. The N.P.D. is taken from a Circle observation of this star on March 10, 1853.
169	H. C. 13889.....	Mar. 11	8½	-0.07	41.72	69.30	2	7.2.41.70	3,552	
170	—————	15	7.8	0.00	41.67					
171	B.A.C. 2363.....	Feb. 14	7	-0.41	28.01					
172	—————	28	7.8	-0.25	28.17	65.2	4	7.5.28.08	3,668	Nos. 171—174. The R.A. is 0°.5 greater than that of H. C. 13990, which is the same star, and 1°.6 greater than that of B.A.C.
173	—————	Mar. 11	7¾	-0.09	28.05					
174	—————	15	7.8	-0.02	28.09					
175	H. C. 14113.....	15	8	-0.03		73.27	1	7.8.42.81	3,450	
176	H. C. 14177.....	Feb. 28	8	-0.27	36.48					
177	—————	Mar. 11	8	-0.11	36.40	67.43	2	7.10.36.44	3,593	
178	δ Geminorum <i>nf</i> ...	15		-0.05		67.45	1	7.11.20.31	3,591	
179	H. C. 14321.....	Feb. 28	8.9	-0.29	41.24					
180	—————	Mar. 11	9	-0.13	41.14	69.1	3	7.14.41.18	3,556	
181	—————	15	9	-0.07	41.17					
182	H. C. 14393.....	Feb. 14	8	-0.44		69.13	1	7.16.54.17	3,550	No. 182. 'The south-preceding and larger component of a double star.' Note of the observer.
183	H. C. 14407.....	28	7	-0.30	21.67	71.34	2	7.17.21.56	3,491	
184	—————	Mar. 15	7.8	-0.08	21.45					
185	H. C. 14515.....	Feb. 14	7	-0.44	25.57					
186	—————	Mar. 11	7	-0.16	25.70	74.35	3	7.20.25.63	3,417	
187	—————	15	6.7	-0.10	25.61					
188	H. C. 14556.....	Feb. 28	7½	-0.32		69.53	1	7.21.44.77	3,530	
189	H. C. 14605.....	Mar. 15	9	-0.12		69.5	1	7.23.9.90	3,548	
190	CASTOR.....					57.48	10	7.25.12.83	3,855	
191	H. C. 14771.....	15	9	-0.14		69.11	1	7.27.28.12	3,541	
192	*.....	24		0.00	34.02	68.13	2	7.29.33.92	3,565	
193	—————	26		+0.03	33.83					
194	PROCYON.....					84.24	20	7.31.36.37	3,191	
195	POLLUX.....					61.37	18	7.36.18.84	3,730	
196	H. C. 15155 <i>f</i> .....	15	8	-0.20		71.18	1	7.39.51.51	3,481	
197	H. C. 15159.....	23		-0.08	6.11					
198	—————	24		-0.07	6.14					
199	—————	26		-0.03	6.00	68.51	4	7.40.6.08	3,539	
200	—————	30		+0.04	6.08					
201	H. C. 15238.....	Feb. 28	7	-0.43		65.28	1	7.41.48.62	3,622	No. 201. The R.A. of H. C. is 30° too great. The star is B. z. 339, 7h.39m.51s.
202	H. C. 15323.....	Mar. 23	8	-0.11		69.27	1	7.44.28.16	3,521	
203	H. C. 15350.....	Feb. 28	8	-0.41		74.15	1	7.44.45.16	3,409	
204	*.....	Mar. 23	9	-0.11	33.76					
205	—————	24		-0.09	34.02					
206	—————	26		-0.06	33.64	69.26	4	7.45.33.85	+3,520	
207	—————	30		0.00	33.97					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	o /		h. m. s.	s.	
208	B.A.C. 2658 .....	Feb. 28	7.8	-0.45		71.21	1	7.52.12.46	+3,469	
209	B. (w.) VII. 1654...	28	8	-0.46		75.49	1	7.56.16.05	3,366	
210	H. C. 15809 .....	Mar. 23	8.9	-0.19		66.48	1	7.58.12.94	3,569	
211	B. (w.) VII. 1732...	Feb. 28	9	-0.47		75.15	1	7.58.51.65	3,376	
212	H. C. 15936 .....	Mar. 23	9	-0.20		72.44	1	8.1.45.47	3,429	
213	H. C. 15954 .....	Feb. 28	9.10	-0.50		68.47	1	8.2.17.73	3,518	
214	H. C. 16033 .....	28	9	-0.53		64.51	1	8.4.47.87	3,608	
215	H. C. 16130 .....	Mar. 23		-0.23	30.41					
216	—————	24		-0.21	30.39	70.51	4	8.7.30.42	3,465	
217	—————	26		-0.18	30.26					
218	—————	29		-0.14	30.61					
219	B. (w.) VIII. 221...	Feb. 28	8	-0.50		76.0	1	8.9.10.24	3,352	
220	* .....	Mar. 23	8.9	-0.28		65.31	1	8.13.13.24	3,582	
221	H. C. 16353 .....	Feb. 28	7.8	-0.53		71.56	1	8.13.30.10	3,435	
222	H. C. 16380 .....	28	7.8	-0.53		71.54	1	8.14.24.32	3,435	
223	H. C. 16447 .....	19	8 $\frac{1}{4}$	-0.63		65.35	1	8.16.12.09	3,574	
224	H. C. 16565 .....	28	8.9	-0.57		68.3	1	8.18.58.30	3,513	
225	H. C. 16596 .....	16	8	-0.61	42.22					
226	—————	19	8 $\frac{1}{2}$	-0.60	42.09	73.12	2	8.19.42.16	3,402	
227	H. C. 16756 .....	19	8	-0.61	1.71	74.10	2	8.24.1.67	3,377	
228	—————	28	8.9	-0.56	1.63					
229	B.A.C. 2888 .....	19	6.7	-0.62	52.94					
230	—————	28	8	-0.57	52.85	74.11	2	8.27.52.90	3,373	
231	B. (w.) VIII. 738 ..	17	8	-0.61		77.47	1	8.28.27.07	3,301	
232	B. (w.) VIII. 780...	Mar. 10	9	-0.49		77.31	1	8.30.6.49	3,305	
233	B. (w.) VIII. 828...	Feb. 28	8	-0.57		77.56	1	8.31.48.23	3,296	
234	B. (w.) VIII. 882...	16	9.10	-0.63	39.69					
235	—————	Mar. 10	8 $\frac{1}{4}$	-0.50	39.57	75.44	2	8.33.39.63	3,337	
236	$\epsilon$ HYDRÆ .....					83.3	15	8.38.59.36	3,196	
237	54 Cancri .....	30	6.7	-0.30	50.01					
238	—————	Apr. 1		-0.28	49.93	74.6	3	8.42.49.95	3,359	
239	—————	5		-0.22	49.91					
240	H. C. 17456 .....	Mar. 18	9.10	-0.48		70.6	1	8.43.55.70	3,436	
241	H. C. 17497 .....	18	8	-0.49		70.8	1	8.44.57.11	3,434	
242	H. C. 17569 .....	10	7 $\frac{1}{2}$	-0.56		74.43	1	8.46.49.64	3,343	
243	* .....	Apr. 7		-0.22	57.15					
244	—————	8	9.10	-0.21	57.04	103.4	2	8.48.57.10	2,841	
245	* .....	1	9 $\frac{1}{4}$	-0.32	55.08					
246	—————	8		-0.21	55.08	103.8	2	8.49.55.08	2,841	
247	B. (w.) VIII. 1299...	Mar. 10	7.8	-0.56		78.35	1	8.50.16.47	3,269	
248	H. C. 17755 .....	8	8.9	-0.64		66.38	1	8.52.22.70	3,493	
249	H. C. 17818 .....	10	8	-0.62		67.54	1	8.54.17.44	3,464	
250	B.A.C. 3095 .....	8	7	-0.60		78.34	1	8.56.37.17	3,265	
251	H. C. 17905 .....	18	8.9	-0.54		69.59	1	8.57.7.50	3,419	
252	H. C. 17932 .....	10	7.8	-0.60		73.33	1	8.58.1.00	3,352	
253	B. (w.) VIII. 1507..	8	9	-0.62		75.23	1	8.59.27.69	3,318	
254	H. C. 18050 .....	10	8	-0.61		73.58	1	9.1.38.25	3,340	
255	B. (w.) IX. 26 .....	8	8	-0.62		75.45	1	9.2.16.92	3,308	
256	$\pi^1$ Cancri .....	10	7	-0.62		74.25	1	9.4.14.54	3,329	
257	B. (w.) IX. 127 ....	8	7.8	-0.63		77.54	1	9.6.41.64	3,267	
258	H. C. 18350 .....	Apr. 8	9	-0.32		78.40	1	9.10.56.05	3,251	
259	B. (w.) IX. 233 ....	Mar. 8	9	-0.64		78.33	1	9.11.40.77	3,252	
260	H. C. 18481 .....	Apr. 8	8.9	-0.37		69.1	1	9.15.29.36	3,408	
261	B. (w.) IX. 341 ....	Mar. 8	8	-0.66		76.51	1	9.16.19.41	3,275	
262	* .....	24		-0.53	54.08					
263	—————	29		-0.47	53.97	78.3	3	9.16.54.02	3,256	
264	—————	30		-0.46	54.02					
265	H. C. 18573 .....	Apr. 8	9	-0.37		72.40	1	9.18.28.19	3,341	
266	$\alpha$ HYDRÆ .....					98.1	12	9.20.21.87	3,950	
267	B. (w.) IX. 493 ....	Mar. 10	8 $\frac{1}{4}$	-0.66		79.12	1	9.23.7.50	3,232	
268	B. (w.) IX. 496 ....	Apr. 8	8.9	-0.38		76.30	1	9.23.19.94	3,273	
269	$h$ Leonis .....	Mar. 24		-0.55	4.59					
270	—————	29		-0.50	4.78	79.38	3	9.24.4.67	3,225	
271	—————	30		-0.49	4.64					
272	H. C. 18815 .....	Apr. 8	9 $\frac{1}{4}$	-0.41		72.54	1	9.26.37.16	3,326	
273	B. (w.) IX. 591 ....	Mar. 10	8	-0.69		75.16	1	9.27.7.36	3,288	
274	B. (w.) IX. 628 ....	24	8.9	-0.57		78.47	1	9.28.27.36	3,233	
275	B. (w.) IX. 657 ....	Apr. 7	9.10	-0.42		80.40	1	9.29.45.51	3,205	
276	H. C. 18903 .....	8	9	-0.41		77.27	1	9.29.45.75	+3,252	

No. 220. The R.A. of H. C. 16337, for which this star was taken, is about 7<sup>s</sup> greater. The N.P.D. was determined by an equatorial comparison with  $\lambda$  Cancri, Oct. 27, 1859. There is no star in the place of H. C.; but one having the same R.A. and greater N.P.D. by exactly 1<sup>o</sup>, was compared with  $\lambda$  Cancri on Oct. 29, 1859. It was judged of Mag. 9.10 and appears to be B. z. 344, 8<sup>h</sup>. 11<sup>m</sup>. 17<sup>s</sup>.

Nos. 243 and 244. The N.P.D. of this star was determined by equatorial observations on Nov. 2, 1859, and its magnitude was estimated at 9.10. At the same time the next star was considered to be of Mag. 9.

No. 247. The R.A. from Weisse's Catalogue is 4<sup>s</sup>.07 greater, owing to error in the annual variation. See the Note to No. 184 in p. 350 of Vol. XVIII.

No. 254. The R.A. is about 0<sup>s</sup>.7 less than that of H. C., but is confirmed by an observation in 1854.

No. 256. This R.A. agrees with that obtained in 1854. The seconds of B.A.C. are 14<sup>s</sup>.80.

No. 267. The N.P.D. of H. C. 18702, for which this star was taken, is 10<sup>o</sup> too great.

No. 273. B. (w.) IX. 593 was at the same time judged to be of Mag. 9.

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
277	B. (w.) ix. 692 ....	Mar. 24	8½	-0.58	18.77	80.52	2	9.31.18.83	+3.201	
278	—	29	9	-0.53	18.89					
279	H. C. 18995 .....	Apr. 7	8.9	-0.47		71.24	1	9.32.56.44	3.340	
280	H. C. 19005 .....	8	9	-0.45		71.27	1	9.33.21.88	3.339	
281	H. C. 19036 .....	Mar. 29	8½	-0.57		72.10	1	9.34.11.61	3.326	
282	H. C. 19039 .....	24	8.9	-0.61		74.34	1	9.34.15.72	3.290	
283	ψ Leonis .....	15		-0.68	43.33					
284	—	Apr. 7	5.6	-0.46	43.26	75.19	2	9.35.43.30	3.277	
285	B. (w.) ix. 821 ....	Mar. 23		-0.61	27.81					
286	—	24	7	-0.60	27.71	80.27	3	9.37.27.79	3.202	
287	—	29	7.8	-0.56	27.85					
288	ε Leonis .....	Apr. 20		-0.34	29.90					
289	—	23		-0.30	29.99					
290	—	30		-0.19	29.99	65.33	4	9.37.29.98	3.425	
291	—	May 5		-0.12	30.04					
292	H. C. 19162 .....	Mar. 15	8.9	-0.72		71.12	1	9.38.39.05	3.334	No. 292. The seconds of R.A. by an observation on March 18, 1851, are 39.48.
293	H. C. 19229 .....	Apr. 7	9	-0.49		75.33	1	9.40.53.20	3.267	
294	B. (w.) ix. 902 ....	Mar. 24	8	-0.61	4.15					No. 293. The R.A. of H. C. is 1.11 less. See the Note to No. 7 in p. 136 of Vol. xviii.
295	—	29	8½	-0.57	4.28	81.1	3	9.41.4.20	3.191	
296	—	30		-0.56	4.17					
297	21 Leonis .....	15	7	-0.70		77.28	1	9.42.54.50	3.238	
298	B. (w.) ix. 963 ....	Apr. 7	9	-0.48		81.12	1	9.44.24.76	3.186	No. 294—296. The R.A. by Weisse's Catalogue is 1.8 less, owing to an erroneous annual variation, which should be 3.179 instead of 3.127.
299	B. (w.) ix. 1011 ...	Mar. 24	8.9	-0.63	53.35					
300	—	30		-0.58	53.38	82.13	2	9.46.53.37	3.171	
301	B. (w.) ix. 1017 ....	15	8	-0.69	8.04					
302	—	Apr. 7	8.9	-0.50	7.94	82.8	2	9.47.7.99	3.172	
303	B. (w.) ix. 1035 ....	Mar. 24		-0.64	8.63					
304	—	29		-0.59	8.78	81.38	3	9.48.8.74	3.178	
305	—	30		-0.58	8.81					
306	B. (w.) ix. 1074 ....	Apr. 7	8.9	-0.53		75.42	1	9.49.55.87	3.254	
307	B.A.C. 3404. ....	Mar. 8	7.8	-0.76	11.73					
308	—	15	8.9	-0.73	11.86	74.5	2	9.50.11.80	3.275	
309	B. (w.) ix. 1118 ....	22	8	-0.66		84.5	1	9.52.1.45	3.144	
310	π Leonis .....	Apr. 7	4.5	-0.52		81.15	1	9.52.26.43	3.179	
311	B. (w.) ix. 1137 ...	Mar. 15	10	-0.72	(13.43)					No. 311 and 312. The circumstances of the observation of March 15 were very bad: the other agrees well with an observation on April 12, 1851.
312	—	29	9	-0.62	13.84	78.32	1	9.53.13.84	3.213	
313	H. C. 19570 .....	8	8	-0.77		73.37	1	9.53.20.16	3.277	
314	B. (w.) ix. 1148 ....	30	8.9	-0.60		83.25	1	9.53.36.67	3.151	
315	H. C. 19617 .....	22	9	-0.67	11.29					
316	—	Apr. 7	9	-0.53	11.16	82.11	2	9.55.11.23	3.166	
317	B. (w.) ix. 1231 ...	Mar. 30	9	-0.63		78.40	1	9.57.2.98	3.208	
318	B. (w.) ix. 1243 ....	29	10	-0.65	44.28					
319	—	Apr. 7	8¾	-0.56	44.37	76.20	2	9.57.44.33	3.236	
320	B. (w.) ix. 1259 ....	Mar. 22	7	-0.71		76.30	1	9.58.43.23	3.233	
321	B. (w.) ix. 1266 ....	8	8	-0.75		82.23	1	9.58.52.47	3.161	
322	REGULUS .....					77.19	21	10.0.32.37	3.221	
323	B. (w.) x. 37 .....	30	7.8	-0.64		84.2	1	10.3.25.90	3.139	
324	H. C. 19857 .....	Apr. 7	9	-0.57		81.36	1	10.4.51.67	3.166	
325	B. (w.) x. 110 .....	Mar. 30	8	-0.65		83.31	1	10.7.2.34	3.143	
326	B. (w.) x. 128 .....	Apr. 7	8.9	-0.61		75.48	1	10.7.56.07	3.230	
327	B. (w.) x. 155 .....	Mar. 30	9	-0.66		84.1	1	10.9.37.67	3.136	
328	B. (w.) x. 169 .....	Apr. 7	8.9	-0.60		81.45	1	10.10.27.15	3.160	
329	B.A.C. 3529 .....	Mar. 30	7.8	-0.67		82.50	1	10.12.50.43	3.146	
330	B. (w.) x. 216 .....	Apr. 7	8	-0.60		84.37	1	10.13.4.01	3.127	No. 330. The seconds of Bessel's R.A., are, 5.67; of that of H. C., 4.52.
331	B. (w.) x. 261 .....	Mar. 30	8	-0.68		85.36	1	10.15.33.38	3.116	
332	H. C. 20144 .....	Apr. 7	8.9	-0.65		74.26	1	10.15.52.69	3.234	
333	B. (w.) x. 317 .....	Mar. 30	8.9	-0.73		75.0	1	10.18.39.64	3.224	
334	45 Leonis .....	Apr. 7	7	-0.64		79.29	1	10.19.52.91	3.176	No. 333. Bessel's R.A. is 0.57 greater.
335	B. (w.) x. 433 .....	Mar 30	8¾	-0.74		76.31	1	10.24.44.48	3.200	
336	B. (w.) x. 993 .....	14	10	-0.81		87.58	1	10.55.12.57	3.084	
337	B. (w.) x. 1063 ....	14	8.9	-0.84		79.15	1	10.58.57.14	3.137	
338	B. (w.) xi. 23 .....	14	7.8	-0.84	52.51					
339	—	17	8	-0.84	52.52	81.19	2	11.2.52.52	3.121	
340	δ LEONIS .....					68.40	20	11.6.17.08	3.192	
341	φ Leonis .....	Apr. 26	6	-0.65		92.51	1	11.9.11.38	3.056	
342	B. (w.) xi. 149 .....	Mar. 14	10	-0.84		82.32	1	11.9.33.38	3.109	
343	B. (w.) xi. 186 .....	14	9	-0.82		87.30	1	11.11.33.19	+3.083	
344	δ Crateris .....	Apr. 26		-0.67	59.81					
345	—	30		-0.63	59.78					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
346	δ Crateris .....	May 4		-0.59	59.81					
347	—	5		-0.59	59.77	103.59	7	11.11.59.80	+3,001	
348	—	7		-0.57	59.88					
349	—	10		-0.58	59.76					
350	—	17		-0.46	59.78					
351	B. (w.) XI. 243 .....	Mar. 14	8.9	-0.82		89.4	1	11.14.37.11	3,075	
352	H. C. 21696 .....	Apr. 30	9.10	-0.66		85.34	1	11.16.18.82	3,090	
353	B. (w.) XI. 295 .....	26	9	-0.72		81.14	1	11.17.47.25	3,108	
354	83 Leonis <i>np.</i> .....	30	7 $\frac{1}{4}$	-0.68		86.11	1	11.19.18.91	3,086	
355	B. (w.) XI. 345 .....	26	9 $\frac{1}{4}$	-0.73		81.19	1	11.20.11.46	3,106	
356	e Leonis .....	30	5.6	-0.68		92.12	1	11.22.48.35	3,062	
357	B. (w.) XI. 445 .....	26	9	-0.74		83.20	1	11.25.55.78	3,094	
358	B. (w.) XI. 458 .....	30	9.10	-0.71		85.4	1	11.26.48.75	3,087	
359	H. C. 22032 .....	30	8.9	-0.71		89.46	1	11.29.45.28	3,071	
360	B. (w.) XI. 562 .....	26		-0.75		90.38	1	11.32.13.98	3,072	
361	B. (w.) XI. 583 .....	30	8	-0.73		89.52	1	11.33.24.20	3,071	
362	B. (w.) XI. 609 .....	26	8	-0.77		86.49	1	11.34.53.53	3,079	
363	H. C. 22218 .....	Mar. 17	7.8	-0.84	29.89					
364	—	Apr. 30	7 $\frac{3}{4}$	-0.75	30.08	89.42	2	11.37.29.99	3,071	
365	β LEONIS .....					74.36	21	11.41.33.55	3,100	
366	B. (w.) XI. 777 .....	26	9	-0.81	54.54					
367	—	30	9	-0.79	54.50	86.5	2	11.44.54.52	3,077	
368	B. (w.) XI. 826 .....	26	9	-0.83	56.37					
369	—	30	9	-0.81	56.38	83.22	2	11.47.56.38	3,079	
370	B. (w.) XI. 875 .....	26	8.9	-0.84		84.50	1	11.50.58.42	3,075	
371	B. (w.) XI. 897 .....	May 4	8.9	-0.78		93.8	1	11.52.13.84	3,068	
372	B. (w.) XI. 940 .....	Apr. 26	9.10	-0.85	53.78					
373	—	30	9 $\frac{1}{4}$	-0.83	53.85	84.58	2	11.54.53.82	3,073	
374	B. (w.) XI. 951 .....	May 4	9	-0.81		85.2	1	11.55.22.01	3,073	
375	B. (w.) XI. 998 .....	Apr. 30	9	-0.83		91.39	1	11.58.23.40	3,070	
376	B.A.C. 4077 .....	May 4	7	-0.80		92.19	1	11.58.28.38	3,070	
377	B. (w.) XI. 1032 .....	Mar. 30	9	-0.90		91.16	1	12.0.47.66	3,071	
378	10 Virginis .....	Apr. 30	7 $\frac{1}{4}$	-0.85	9.43					
379	—	May 4	6.7	-0.83	9.47	87.17	2	12.2.9.45	3,071	
380	B. (w.) XII. 62 .....	Mar. 30	9	-0.90		96.11	1	12.4.42.38	3,074	
381	B. (w.) XII. 68 .....	May 4	8 $\frac{1}{4}$	-0.84		85.47	1	12.4.59.54	3,069	
382	B. (w.) XII. 82 .....	Apr. 30	9	-0.86		90.25	1	12.6.5.23	3,071	
383	B. (w.) XII. 103 .....	Mar. 30	8	-0.91		90.31	1	12.7.28.54	3,071	
384	B. (w.) XII. 117 .....	May 4	8 $\frac{1}{4}$	-0.84		95.20	1	12.8.19.81	3,075	
385	H. C. 22986 .....	Mar. 18	8.9	-0.84		92.11	1	12.8.35.67	3,073	
386	B. (w.) XII. 128 .....	Apr. 30	8.9	-0.87		96.43	1	12.8.48.83	3,077	
387	B. (w.) XII. 159 .....	Mar. 18	9	-0.85		87.43	1	12.10.38.30	3,068	
388	B. (w.) XII. 178 .....	Apr. 30	8 $\frac{3}{4}$	-0.88		92.30	1	12.11.41.73	3,074	
389	B. (w.) XII. 181 .....	May 4	9.10	-0.86		94.56	1	12.11.52.23	3,077	
390	H. C. 23100 .....	11	9	-0.82		96.16	1	12.12.34.29	3,079	
391	B. (w.) XII. 218 .....	Mar. 18	10	-0.85		89.26	1	12.13.45.70	3,070	
392	H. C. 23179 .....	Apr. 30	9	-0.89	28.57					
393	—	May 4	9.10	-0.87	28.47	94.46	2	12.15.28.52	3,078	
394	B. (w.) XII. 258 .....	11	7.8	-0.83		95.18	1	12.15.54.65	3,079	
395	H. C. 23223 .....	Mar. 18	8	-0.84		93.24	1	12.17.27.53	3,077	
396	B. (w.) XII. 291 .....	Apr. 30	9	-0.90	17.10					
397	—	May 4	9	-0.88	16.99	94.3	2	12.18.17.05	3,078	
398	B. (w.) XII. 295 .....	11	8 $\frac{1}{4}$	-0.86		87.9	1	12.18.30.45	3,065	
399	B. (w.) XII. 332 .....	Mar. 18	9	-0.84		93.52	1	12.20.23.12	3,079	
400	B. (w.) XII. 356 .....	Apr. 30	9 $\frac{1}{4}$	-0.92	24.09					
401	—	May 4	9	-0.90	24.01					
402	—	10	9	-0.87	24.12	88.2	4	12.21.24.07	3,066	
403	—	11	8.9	-0.87	24.07					
404	B.A.C. 4225 .....	4	6.7	-0.90	5.53					
405	—	10	8	-0.87	5.43	94.14	3	12.24.5.47	3,081	
406	—	11	6 $\frac{1}{2}$	-0.87	5.46					
407	B. (w.) XII. 388 .....	Mar. 18	10.11	-0.84		91.15	1	12.24.37.49	3,074	
408	β Corvi .....					112.35	18	12.26.40.51	3,135	
409	B. (w.) XII. 494 .....	May 11	8.9	-0.89		97.29	1	12.29.45.86	3,093	
410	B. (w.) XII. 515 .....	Mar. 29	8	-0.92		88.58	1	12.31.1.57	3,067	
411	B. (w.) XII. 523 .....	May 4	9.10	-0.93		97.6	1	12.31.28.99	3,093	
412	B. (w.) XII. 555 .....	11	10	-0.91		97.57	1	12.33.24.07	3,098	
413	B. (w.) XII. 562 .....	29	9	-0.91		96.34	1	12.33.47.59	3,093	
414	γ Virginis .....	17		-0.88	12.96					
415	—	18		-0.88	12.74	90.39	2	12.34.12.85	+3,073	

No. 355. The star is H. C. 21809: Bessel's N.P.D. is 1' too small. See the note to No. 128 in p. 138 of Vol. XVIII.

No. 391. A faint star. The R.A. does not well agree with that by two observations in 1851.

No. 407. The star observed March 20, 1851: apparently too faint for accurate observation.

No. 413. The R.A. agrees with that from an observation on March 20, 1851. Bessel's is 1° less.

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
416	B. (w.) XII. 599....	May 11	9 $\frac{1}{4}$	-0.92		92. 4	1	12. 35. 50.81	+3,078	
417	B. (w.) XII. 613....	Mar. 29	9	-0.91		96.28	1	12. 36. 26.21	3,095	
418	B. (w.) XII. 701....	May 11	8.9	-0.94		98.25	1	12. 41. 22.88	3,106	
419	B. (w.) XII. 761....	11	8 $\frac{3}{4}$	-0.95		95.17	1	12. 44. 36.91	3,095	
420	38 Virginis.....	17		-0.93	39.83	92.45	2	12. 45. 39.75	3,083	
421	—	18		-0.92	39.67					
422	δ Virginis.....	17		-0.95	12.30					
423	—	18		-0.95	11.98	85.48	2	12. 48. 12.14	3,050	
424	B. (w.) XII. 853....	11	9	-0.98		96.21	1	12. 50. 17.95	3,103	
425	46 Virginis.....	11	6	-0.99		92.35	1	12. 53. 1.98	3,085	
426	B. (w.) XII. 920....	14	8.9	-0.98		97.39	1	12. 53. 45.54	3,112	
427	B. (w.) XII. 976....	14	9.10	-0.99		91. 5	1	12. 56. 43.16	3,077	No. 426. The seconds of Bessel's R.A. are 46 <sup>s</sup> .64.
428	g Virginis.....	14	5.6	-1.01	12.10					
429	—	17		-0.99	12.13	99.57	3	13. 0. 12.07	3,132	
430	—	18		-0.99	11.99					
431	B.A.C. 4413.....	14	8 $\frac{3}{4}$	-1.02		99.19	1	13. 3. 9.23	3,130	
432	53 Virginis.....	17		-1.03	14.66					
433	—	18		-1.02	14.52	105.24	2	13. 4. 14.59	3,172	
434	B. (w.) XIII. 76....	14	8	-1.03		102.41	1	13. 5. 37.31	3,156	
435	H. C. 24610.....	14	8	-1.03		94.53	1	13. 8. 26.70	3,104	
436	61 Virginis.....	17		-1.06	43.46					
437	—	18		-1.05	43.34	107.29	2	13. 10. 43.40	3,198	
438	B. (w.) XIII. 176....	14	9	-1.04		97.22	1	13. 11. 3.19	3,123	
439	B. (w.) XIII. 256....	Apr. 8		-0.98		100. 6	1	13. 16. 12.67	3,148	
440	SPICA.....					100.24	18	13. 17. 27.31	3,152	
441	B. (w.) XIII. 326....	14	9	-1.02		98.59	1	13. 20. 45.23	3,144	
442	B. (w.) XIII. 395....	14	8.9	-1.02		95.15	1	13. 24. 13.09	3,115	
443	l <sup>2</sup> Virginis.....	May 17		-1.08	19.70					
444	—	18		-1.08	19.62	95.30	2	13. 24. 19.66	3,117	
445	H. C. 25106.....	Apr. 14	9	-1.03		96.13	1	13. 27. 23.94	3,125	
446	B. (w.) XIII. 511....	14	8.9	-1.04		103.51	1	13. 30. 9.81	3,197	
447	B. (w.) XIII. 590....	14	9.10	-1.03		94.56	1	13. 34. 41.46	3,117	
448	B.A.C. 4593.....	May 16	8	-1.14		95.58	1	13. 39. 44.87	3,130	
449	3 Bootis.....	Apr. 27		-1.32		63.33	1	13. 39. 53.64	2,790	
450	B. (w.) XIII. 730....	May 16	9.10	-1.15		97. 3	1	13. 42. 19.40	3,142	
451	B. (w.) XIII. 773....	16	9.10	-1.16		97.22	1	13. 45. 32.16	3,147	
452	η Bootis.....	Apr. 26		-1.23	41.18					
453	—	30		-1.25	41.04					
454	—	May 16		-1.26	41.10	70.52	4	13. 47. 41.13	2,861	
455	—	19		-1.25	41.20					
456	B. (w.) XIII. 1023..	Apr. 13	9	-1.03		102. 0	1	13. 57. 58.95	3,211	
457	H. C. 25983.....	14	9.10	-1.04		101.44	1	14. 3. 15.97	3,213	
458	B. (w.) XIV. 62....	13	8	-1.02		99.12	1	14. 4. 43.77	3,183	
459	B. (w.) XIV. 88....	14	9.10	-1.03		98.27	1	14. 5. 50.73	3,174	
460	ARCTURUS.....					70. 3	15	14. 8. 57.44	2,812	
461	B.A.C. 4828.....	May 11	6.7	-1.26		101.41	1	14. 29. 11.06	3,238	
462	B. (w.) XIV. 584....	11	10	-1.26		99.19	1	14. 31. 53.94	3,206	
463	B. (w.) XIV. 641....	11	9	-1.27		100.13	1	14. 35. 9.73	3,222	
464	ε BOOTIS.....					62.18	14	14. 38. 34.01	2,623	
465	α <sup>2</sup> LIBRÆ.....					105.26	15	14. 42. 45.32	3,311	
466	ξ <sup>1</sup> LIBRÆ.....	7	6.7	-1.25		101.18	1	14. 46. 24.53	3,248	
467	ξ <sup>2</sup> LIBRÆ.....	7	6	-1.25		100.49	1	14. 48. 47.83	3,242	
468	B. (w.) XIV. 972....	7	9.10	-1.27		105.12	1	14. 51. 39.04	3,318	
469	B. (w.) XIV. 1049..	7	10	-1.27		103. 8	1	14. 55. 57.68	3,287	
470	B. (w.) XIV. 1099..	7	8	-1.27		102.20	1	14. 58. 30.82	3,276	
471	B. (w.) XIV. 1150..	7	8	-1.27		103.26	1	15. 0. 56.41	3,297	
472	B. (w.) XV. 61.....	7	8.9	-1.28		104. 8	1	15. 4. 33.84	3,313	
473	β LIBRÆ.....	Apr. 27		-1.14	6.27					
474	—	30		-1.18	6.20					
475	—	May 4		-1.23	6.22	98.50	5	15. 9. 6.22	3,223	
476	—	7		-1.26	6.15					
477	—	10		-1.29	6.24					
478	ξ <sup>4</sup> LIBRÆ.....	June 29		-1.51		106.21	1	15. 24. 37.44	3,376	
479	α CORONÆ.....					62.47	12	15. 28. 27.88	2,528	
480	B. (w.) XV. 606....	May 11	10	-1.32		103. 7	1	15. 31. 58.97	3,319	
481	B. (w.) XV. 631....	7	7 $\frac{3}{4}$	-1.28		103.30	1	15. 33. 5.12	3,328	
482	α SERPENTIS.....					83. 7	12	15. 37. 1.81	2,940	
483	δ SCORPII.....	June 29	6	-1.68		115.18	1	15. 42. 8.77	3,592	
484	θ LIBRÆ.....	29		-1.61		106.18	1	15. 45. 27.72	+3,396	

No. 426. The seconds of Bessel's R.A. are 46<sup>s</sup>.64.

No. 457. This R.A. is confirmed by an observation in 1854. That of H. C. is about 1<sup>s</sup> less.

No. 462. The seconds of Bessel's R.A. are 54<sup>s</sup>.71.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
485	δ Scorpil.....	June 29		-1.68		112.12	1	15.51.38.91	+3,533	
486	β <sup>1</sup> Scorpil.....	Apr. 26		-1.11	53.92					
487	—	27		-1.12	53.87					
488	—	May 4		-1.25	53.86	109.24	5	15.56.53.86	3,475	
489	—	11		-1.36	53.82					
490	—	14		-1.40	53.84					
491	H. C. 29452.....	June 16	8	-1.68		107.44	1	16.2.48.41	3,444	
492	A. (o.) 15398.....	16	7.8	-1.68		107.43	1	16.4.58.93	3,445	
493	δ OPHIUCHI.....					93.19	9	16.6.38.81	3,139	
494	H. C. 29677.....	May 11	8	-1.33	0.75	107.1	2	16.10.0.74	3,434	
495	—	14	8	-1.38	0.73					
496	H. C. 29778.....	June 16	8	-1.70		106.40	1	16.14.27.73	3,429	
497	ANTARES.....					116.6	6	16.20.24.11	3,665	
498	H. C. 30046.....	16	10	-1.76		110.26	1	16.23.46.06	3,526	
499	H. C. 30474.....	30	8.9	-1.82		107.19	1	16.38.2.41	3,461	
500	H. C. 30547.....	30	9	-1.84		109.0	1	16.40.39.24	3,504	
501	H. C. 30678.....	30	8	-1.94		115.35	1	16.45.19.51	3,677	
502	49 Herculis.....	May 17		-1.39		74.47	1	16.45.23.42	2,726	
503	54 Herculis.....	17		-1.49		71.20	1	16.48.54.57	2,641	
504	H. C. 30813.....	June 30	9	-1.93		113.31	1	16.49.58.44	3,626	
505	B.A.C. 5730.....	30	8	-1.95		114.2	1	16.54.33.41	3,643	
506	B.A.C. 5749.....	May 17		-1.37	23.89					
507	—	18		-1.38	23.88	75.42	2	16.56.23.89	2,743	
508	H. C. 31140.....	June 30	8	-1.89		108.4	1	17.0.33.29	3,492	
509	η Ophiuchi.....	May 18		-1.38		105.32	1	17.1.57.13	3,430	
510	B. (w.) XVII. 48...	June 16		-1.75		101.26	1	17.4.9.77	3,333	
511	α HERCULIS.....					75.26	10	17.7.56.78	2,732	
512	H. C. 31556.....	30	7.8	-1.98		112.52	1	17.14.19.70	3,623	
513	H. C. 31733.....	30	8.9	-1.97		110.50	1	17.19.30.41	3,572	
514	H. C. 31911.....	30	9	-1.98		110.40	1	17.24.40.51	3,569	
515	λ Herculis.....	May 18		-1.43		63.46	1	17.24.47.83	2,420	
516	α OPHIUCHI.....					77.20	11	17.28.6.78	2,773	
517	H. C. 32119.....	July 1	9	-2.03		112.58	1	17.31.1.01	3,633	
518	B.A.C. 5989.....	1	8½	-2.05		113.36	1	17.35.20.13	3,651	
519	B.A.C. 6034.....	1	7.8	-2.00		109.29	1	17.43.7.26	3,542	
520	H. C. 32706.....	1	9.10	-1.99		108.16	1	17.46.29.63	3,511	
521	H. C. 32865.....	1	9	-2.06		112.27	1	17.50.33.43	3,623	
522	B.A.C. 6088.....	Aug. 10	7	-2.04		112.46	1	17.53.0.33	3,632	
523	B.A.C. 6098.....	July 1	8	-2.04		110.44	1	17.53.51.24	3,577	
524	B.A.C. 6111.....	Aug. 10	7.8	-2.08		114.24	1	17.56.9.79	3,677	
525	B.A.C. 6132.....	July 1	8	-2.12		115.29	1	17.59.48.62	3,708	
526	B.A.C. 6133.....	Aug. 10	7.8	-2.05		111.28	1	17.59.49.70	3,596	
527	B.A.C. 6161.....	10	6	-2.10		113.44	1	18.2.45.38	3,658	
528	μ <sup>1</sup> SAGITTARI.....					111.6	7	18.4.58.46	3,586	
529	B.A.C. 6194.....	10	5	-2.19		117.5	1	18.8.51.19	3,754	
530	H. C. 33604.....	9	9¼	-2.06		108.45	1	18.9.20.13	3,524	
531	H. C. 33748.....	9	7.8	-2.08	44.26	108.55	2	18.12.44.25	3,528	
532	—	10	7¼	-2.07	44.24					
533	H. C. 33855.....	10	9¼	-2.21		116.34	1	18.15.30.28	3,738	
534	H. C. 33917.....	9	10	-2.13		111.7	1	18.16.51.79	3,586	
535	B.A.C. 6267.....	10	7	-2.08		107.53	1	18.19.21.90	3,501	
536	H. C. 34117.....	9	9.10	-2.14		111.3	1	18.21.4.60	3,583	
537	B.A.C. 6292.....	10	7.8	-2.11		109.0	1	18.22.41.63	3,529	
538	B.A.C. 6304.....	9	8.9	-2.21		114.13	1	18.24.15.19	3,669	
539	H. C. 34401.....	9	9	-2.14		108.54	1	18.27.54.66	3,525	
540	B.A.C. 6333.....	10	8	-2.14		109.20	1	18.28.27.39	3,536	
541	H. C. 34504.....	9	9.10	-2.20		112.5	1	18.30.39.91	3,608	
542	H. C. 34619.....	10	8¼	-2.18		110.27	1	18.33.41.70	3,564	
543	H. C. 34659.....	8	9.10	-2.22	46.58					
544	—	9	9	-2.20	46.68	111.4	2	18.34.46.63	3,580	
545	H. C. 34749.....	July 26	7.8	-2.19	3.87	107.42	2	18.37.3.92	3,492	
546	—	Aug. 10	8.9	-2.17	3.96					
547	28 Sagittarii.....	8	7.8	-2.24		112.32	1	18.37.28.76	3,618	
548	H. C. 34787.....	9	10	-2.23		112.27	1	18.38.6.59	3,615	
549	H. C. 34882.....	July 26	9	-2.23		110.19	1	18.40.7.70	3,558	
550	H. C. 34889.....	Aug. 10	8¼	-2.18		108.48	1	18.40.11.90	3,519	
551	H. C. 34930.....	8	9¼	-2.17		107.4	1	18.41.5.28	3,475	
552	30 Sagittarii.....	9	8	-2.24		112.20	1	18.42.0.27	3,611	
553	β LYRÆ.....					56.48	10	18.44.39.20	+2,212	

No. 496. This is Arg. (Oeltz.) 15571, the place of which agrees with that of No. 426 in p. 142 of Vol. XVIII. The N.P.D. of H. C. 29778 (which is A. (o.) 15568) and H. C. 29779 should be interchanged.

No. 499. The R.A. of H. C. from two observations is 1° 01' less. Is the Camb. observation 1' in excess? See the Addenda to the Introduction.

No. 521. This is Arg. (Oeltzen) 17438 and 17439.

No. 534. The sky appears to have been free from clouds. The estimated magnitude in 1849 was 8.9.

No. 542. The seconds of R.A. by H. C. are 41°.21; by A. (o.) 18564 and 18565, 41°.68; and by the Camb. observation of 1849, 41°.84. See the note to No. 562 in p. 106 of Vol. XVIII, which is inaccurate.

No. 550. The north-preceding star viz. H. C. 34884, was judged at the same time to be of Mag. 7.8.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
554	$\sigma$ Sagittarii.....	Aug. 9	4	-2,34		116.28	1	18.46.8,90	+3,723	
555	H. C. 35224.....	10	9 $\frac{1}{4}$	-2,28		113.27	1	18.47.51,05	3,638	
556	H. C. 35247.....	July 26		-2,21		107.26	1	18.48.18,56	3,481	
557	B.A.C. 6465.....	Aug. 9	9	-2,32		115.4	1	18.49.19,72	3,682	
558	H. C. 35374.....	10	8.9	-2,21		108.38	1	18.51.14,13	3,510	
559	H. C. 35411.....	July 30		-2,22		107.25	1	18.52.11,64	3,479	
560	B.A.C. 6490.....	Aug. 9	8	-2,33		115.3	1	18.53.27,73	3,679	
561	H. C. 35499.....	10	7	-2,24		109.19	1	18.54.28,93	3,526	
562	$\zeta$ AQUILÆ.....					76.21	12	18.58.39,26	3,385	
563	H. C. 36016.....	Sept. 22	8 $\frac{1}{2}$	-1,83		112.18	1	19.5.20,66	3,597	
564	H. C. 36196.....	22	9.10	-1,85		111.46	1	19.9.10,87	3,580	
565	H. C. 36239.....	Aug. 8	8.9	-2,28		108.58	1	19.9.54,47	3,509	
566	B.A.C. 6616.....	8	8	-2,30		109.30	1	19.13.0,14	3,520	No. 565. There is no star in the place of H. C. 36240, which has the same R.A. and greater N.P.D. by 2',3. See the note of the observer.
567	H. C. 36516.....	Sept. 21	9	-1,92	49,19	112.51	2	19.15.49,17	3,603	
568		23	9	-1,88	49,14					
569	$\chi^s$ Sagittarii.....	Aug. 8	9.10	-2,40		114.42	1	19.16.26,36	3,652	
570	H. C. 36678.....	8		-2,34		110.49	1	19.19.25,02	3,549	
571	B.A.C. 6666.....	Sept. 21	7	-2,01		117.17	1	19.20.46,39	3,718	
572	H. C. 36777.....	23	9	-1,87		109.51	1	19.21.25,75	3,523	
573	B.A.C. 6683.....	Aug. 8	9	-2,36	31,36	111.49	2	19.23.31,54	3,571	No. 573 and 574. This is Arg <sup>r</sup> . (Oeltz.) 19671.
574		Sept. 23	8	-1,85	31,71					
575	H. C. 36999.....	Aug. 8	9.10	-2,33		109.5	1	19.26.22,51	3,501	
576	H. C. 37096.....	Sept. 23	8 $\frac{1}{4}$	-1,95		112.17	1	19.28.41,19	3,578	
577	H. C. 37491.....	Aug. 8	10	-2,46		115.14	1	19.37.30,34	3,645	
578	$\gamma$ AQUILÆ.....					79.44	16	19.39.16,27	2,851	
579	$\alpha$ AQUILÆ.....					81.31	28	19.43.36,67	2,091	
580	$\beta$ AQUILÆ.....					83.57	22	19.48.5,59	2,944	
581	H. C. 38081.....	10	9.10	-2,41		111.15	1	19.51.44,97	3,530	
582	H. C. 38096.....	8	9	-2,39		110.15	1	19.51.56,77	3,506	
583	B. (w.) XIX. 1323..	9	9	-2,32	2,34	105.9	2	19.53.2,41	3,390	
584		24	9.10	-2,29	2,47					
585	B.A.C. 6878.....	8	8	-2,45	1,36					
586		10	7.8	-2,45	1,45	113.0	3	19.55.1,40	3,568	
587		Sept. 22	8	-2,11	1,40					
588	H. C. 38240.....	24	10	-2,15		116.44	1	19.55.20,96	3,661	
589	B. (w.) XIX. 1418..	Aug. 9	10	-2,32		105.1	1	19.56.21,55	3,384	
590	H. C. 38314.....	July 30	9	-2,31		106.47	1	19.56.59,82	3,422	
591	H. C. 38367.....	Aug. 10	8	-2,38		108.43	1	19.58.1,14	3,465	
592	H. C. 38396.....	8	9	-2,48		114.18	1	19.58.53,67	3,595	No. 592. H. C. 38391 and 38396 which differ 1',38 in R.A., are the same star. The seconds of R.A. from the latter are 53',27. The star is A. (o.) 20246, the seconds from which are 52',94.
593	B.A.C. 6903.....	9	9	-2,39		109.14	1	19.59.43,23	3,475	
594	H. C. 38503.....	Sept. 21	8 $\frac{1}{4}$	-2,09	13,97	108.46	2	20.1.13,94	3,463	
595		22	10	-2,08	13,90					
596	H. C. 38517.....	Aug. 10	9	-2,51		115.21	1	20.1.37,07	3,617	
597	B.A.C. 6923.....	July 30	8	-2,36		109.48	1	20.1.54,17	3,486	
598	A. (o.) 20308.....	Sept. 22	10	-2,17		113.52	1	20.3.55,71	3,578	No. 598. The star observed with the Transit July 9, 1852. See the note to No. 501 in p. 55.
599	H. C. 38705.....	July 30	9.10	-2,32		107.6	1	20.5.36,58	3,422	
600	H. C. 38782.....	Aug. 11	9.10	-2,49		113.57	1	20.7.27,38	3,575	
601	$\alpha^2$ CAPRICORNII.....					103.0	12	20.9.53,79	3,331	
602	H. C. 39095.....	July 30	9	-2,31		106.18	1	20.14.3,66	3,397	
603	B. (w.) XX. 346....	Aug. 11	9 $\frac{1}{4}$	-2,35		105.4	1	20.14.21,16	3,371	
604	B.A.C. 7009.....	Sept. 22	7.8	-2,08	12,97	104.44	2	20.15.12,91	3,363	
605		Oct. 1	7.8	-1,96	12,85					
606	B. (w.) XX. 419....	July 30	10	-2,28	18,17	104.36	2	20.17.18,16	3,358	
607		Aug. 11	9.10	-2,35	18,14					
608	B.A.C. 7040.....	Oct. 1	8	-2,12		114.28	1	20.20.1,15	3,569	No. 608. H. C. 39352 is the same star if its R.A. be 30' too great. See No. 688 in p. 221 of Vol. XVIII.
609	B.A.C. 7044.....	July 30	8	-2,34		108.21	1	20.20.36,77	3,433	
610	B.A.C. 7049.....	Aug. 11	7	-2,49		112.52	1	20.20.53,60	3,531	
611	B. (w.) XX. 566....	Sept. 23	10	-2,10	49,65	104.4	2	20.22.49,79	3,343	
612		Oct. 3	9	-1,96	49,92					
613	B.A.C. 7069.....	Sept. 22	8	-2,24		112.39	1	20.23.36,89	3,522	
614	H. C. 39518.....	Aug. 11	9.10	-2,35		104.12	1	20.24.34,95	3,344	
615	B. (w.) XX. 612....	July 30	9	-2,27		104.2	1	20.24.39,13	3,340	No. 615. The following star estimated of Mag. 10, is B. (w.) XX. 629. See the note of the observer.
616	B. (w.) XX. 664....	Sept. 22	10	-2,14	32,58					
617		23	10	-2,13	32,46	104.56	3	20.26.32,50	3,357	
618		Oct. 3	9.10	-1,99	32,46					
619	B.A.C. 7102.....	Aug. 11	7.8	-2,46	55,65	111.5	2	20.27.55,69	3,482	
620		Oct. 18	9	-1,84	55,72					
621	B.A.C. 7123.....	Aug. 11	7 $\frac{3}{4}$	-2,40		107.4	1	20.30.45,18	+3,395	No. 621. This R.A. agrees with that obtained in 1849. See the note to No. 808 in p. 110 of Vol. XVIII.
622	B. (w.) XX. 790....	Sept. 22	6.7	-2,16	3,07					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	°		h. m. s.	s.	
623	B. (w.) xx. 790 ....	Oct. 18	7	-1.79	3.01	105.28	3	20.31.30.00	+3,363	
624	—	20	7	-1.75	2.92					
625	B.A.C. 7128 .....	Sept. 23	7	-2.29		114.19	1	20.31.26.70	3,548	
626	B. (w.) xx. 823 ....	Oct. 1	8.9	-2.06	26.18	105.56	2	20.32.26.20	3,371	No. 625. This is A. (o.) 20705, with which it agrees in R.A. The seconds from B.A.C. are 92.32.
627	—	3	9	-2.03	26.21					
628	H. C. 39926 .....	Aug. 11	9.10	-2.43		109.7	1	20.33.52.03	3,434	
629	H. C. 39981 .....	Sept. 22	9	-2.24		109.52	1	20.35.29.93	3,447	
630	B. (w.) xx. 913 ....	24	10.11	-2.16	44.03					
631	—	Oct. 20	10.11	-1.78	44.03	105.30	2	20.35.44.03	3,359	
632	B. (w.) xx. 932 ....	Aug. 11	9	-2.38		105.29	1	20.36.32.48	3,358	
633	B. (w.) xx. 950 ....	Oct. 18	8	-1.82		105.34	1	20.37.9.97	3,359	
634	B. (w.) xx. 973 ....	3	9	-2.02		103.21	1	20.38.9.45	3,315	
635	H. C. 40073 .....	1	8	-2.14		109.58	1	20.38.12.90	3,445	
636	B. (w.) xx. 1031 ...	Aug. 11	9	-2.36		104.5	1	20.40.26.55	3,327	
637	H. C. 40159 .....	Oct. 18	8	-1.81	58.52					
638	—	20	8.9	-1.78	58.51	103.9	3	20.40.58.54	3,309	
639	—	22	8½	-1.75	58.58					
640	B. (w.) xx. 1106 ...	1	8	-2.09		104.28	1	20.43.10.26	3,332	
641	H. C. 40235 .....	Sept. 23	8	-2.24	11.93	108.3	2	20.43.11.81	3,401	
642	—	Oct. 3	8	-2.11	11.68					
643	H. C. 40311 .....	Aug. 11	8	-2.45	9.23					
644	—	Oct. 18	8½	-1.92	9.34	109.40	3	20.45.9.27	3,430	
645	—	20	8.9	-1.88	9.25					
646	H. C. 40330 .....	22	8½	-1.85		109.33	1	20.45.43.41	3,427	
647	H. C. 40391 .....	3	7.8	-2.12		107.40	1	20.47.30.37	3,388	
648	H. C. 40410 .....	Aug. 11	8.9	-2.42		107.48	1	20.47.52.36	3,390	
649	H. C. 40488 .....	Sept. 23	10	-2.33	45.75					
650	—	Oct. 25	10	-1.86	45.76	111.54	2	20.49.45.76	3,467	
651	B. (w.) xx. 1275 ...	20	10.11	-1.84		104.12	1	20.49.56.60	3,320	
652	H. C. 40622 .....	Sept. 23	8½	-2.37	52.80					
653	—	Oct. 1	8.9	-2.27	52.59					
654	—	3	8.9	-2.24	52.67	113.39	4	20.52.52.70	3,497	
655	—	25	8	-1.90	52.72					
656	B. (w.) xx. 1394 ...	18	7.8	-1.88		103.1	1	20.54.22.60	3,295	
657	H. C. 40744 .....	Sept. 23	8	-2.30	43.92					
658	—	Oct. 7	9	-2.12	43.74	108.41	3	20.55.43.79	3,396	
659	—	22	8½	-1.90	43.72					
660	B.A.C. 7325 .....	25	7.8	-1.89		110.46	1	20.58.19.01	3,432	
661	B. (w.) xx. 1501 ...	Sept. 23	8½	-2.24	3.34	103.47	2	20.59.3.23	3,304	
662	—	Oct. 22	9	-1.85	3.12					
663	H. C. 40491 .....	7	9.10	-2.12		106.45	1	21.0.58.25	3,354	
664	B. (w.) xxi. 15 ....	Sept. 23	10.11	-2.23	59.48	102.7	2	21.1.59.43	3,272	Nos. 664 and 665. A very faint star. The Apparent R.A. from the transits at the wires and the bars on Sept. 24, are discordant, but the mean result appears to be good.
665	—	24	10	-2.22	59.37					
666	B. (w.) xxi. 43 ....	Oct. 22	8½	-1.86		102.8	1	21.3.32.14	3,271	
667	B. (w.) xxi. 54 ....	25	8½	-1.81		102.7	1	21.3.57.83	3,270	
668	B. (w.) xxi. 90 ....	Sept. 23	10	-2.26		103.26	1	21.5.36.21	3,291	
669	H. C. 41149 .....	30	8	-2.17		102.33	1	21.5.48.97	3,276	
670	B.A.C. 7378 .....	Oct. 25	8	-1.95		110.47	1	21.8.19.64	3,416	
671	H. C. 41276 .....	Sept. 23	9	-2.37	53.43					
672	—	30	8½	-2.30	53.19	110.7	2	21.8.53.31	3,403	
673	B. (w.) xxi. 222 ...	24	9	-2.26		102.53	1	21.10.29.19	3,277	
674	B. (w.) xxi. 239 ...	Oct. 1	7	-2.20		103.40	1	21.11.17.79	3,289	No. 674. The recorded time of transit of this star on Sept. 24, 1849, was 1 <sup>s</sup> in defect. The error is not corrected in the Catalogue of that year.
675	B. (w.) xxi. 252 ...	Aug. 5		-2.31		104.38	1	21.11.43.89	3,305	
676	B. (w.) xxi. 258 ...	Sept. 23	9.10	-2.29	59.83					
677	—	Oct. 22	8.9	-1.92	59.77	103.36	2	21.11.59.80	3,287	
678	B. (w.) xxi. 345 ...	Aug. 5		-2.28		101.51	1	21.15.11.82	3,255	
679	B. (w.) xxi. 348 ...	24	8	-2.43		104.8	1	21.15.18.13	3,292	
680	B. (w.) xxi. 357 ...	Sept. 23	10	-2.27	48.18					
681	—	24	10	-2.26	48.10					
682	—	Oct. 1	9.10	-2.19	48.04	101.20	4	21.15.48.14	3,247	
683	—	3	10	-2.17	48.22					
684	33 Capricorni .....	7	8	-2.26	49.04	111.28	2	21.15.49.12	3,416	
685	—	25	6.7	-1.99	49.20					
686	H. C. 41580 .....	Nov. 1	8½	-1.78		102.24	1	21.16.42.14	3,263	
687	B. (w.) xxi. 418 ...	Aug. 5		-2.28	25.90	102.43	2	21.18.25.87	3,266	
688	—	24	7	-2.41	25.84					
689	B. (w.) xxi. 422 ...	Oct. 7	8.9	-2.13		101.33	1	21.18.29.98	3,248	
690	B. (w.) xxi. 423 ...	22	10	-1.94		102.40	1	21.18.30.64	+3,265	
691	B.A.C. 7456 .....	1	8	-2.22	6.38					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
692	B.A.C. 7456. ....	Oct. 3	8.9	-2,20	6,38	102.34	3	21.20.6,41	+3,262	
693	—	25	8	-1,90	6,47					
694	B. (w.) XXI. 495 ...	Aug. 24	9	-2,41		102.43	1	21.21.30,07	3,263	
695	B.A.C. 7463. ....	Oct. 7	8.9	-2,25		109.47	1	21.21.44,22	3,377	
696	$\beta$ AQUARI. ....					96.13	12	21.23.49,16	3,162	
697	H. C. 41984. ....	3	8.9	-2,32	19,27					
698	—	22	9	-2,14	19,19	109.25	3	21.27.19,26	3,362	
699	—	25	8.9	-2,03	19,32					
700	B. (w.) XXI. 675 ...	Nov. 1	8 $\frac{1}{2}$	-1,82		99.42	1	21.28.45,43	3,211	
701	$\epsilon$ Capricorni. ....	Oct. 7	7	-2,29		110.7	1	21.28.50,62	3,371	
702	B. (w.) XXI. 719 ...	Aug. 5		-2,24	30,74					
703	—	Sept. 24	9	-2,30	30,66	99.55	3	21.30.30,67	3,213	
704	—	Oct. 22	8	-1,97	30,60					
705	B. (w.) XXI. 742 ...	3	10.11	-2,25		102.55	1	21.31.16,85	3,256	
706	B. (w.) XXI. 748 ...	25	8.9	-1,94		100.35	1	21.31.30,99	3,221	
707	B. (w.) XXI. 775 ...	Nov. 1	8 $\frac{1}{2}$	-1,85		100.39	1	21.32.33,36	3,222	
708	$\delta$ Capricorni. ....	Oct. 22	5.6	-2,04		104.42	1	21.33.33,16	3,280	
709	B. (w.) XXI. 830 ...	Aug. 5		-2,23		99.8	1	21.34.39,25	3,198	
710	B. (w.) XXI. 828. ....	Sept. 24	10	-2,34	40,14					
711	—	Oct. 3	9	-2,26	40,08					
712	—	18	9.10	-2,08	39,90	102.43	4	21.34.40,07	3,249	
713	—	25	8.9	-1,98	40,15					
714	B. (w.) XXI. 864 ...	Nov. 1	9	-1,87		100.40	1	21.35.43,15	3,219	
715	B. (w.) XXI. 906. ....	Aug. 5		-2,28	29,07					
716	—	Sept. 24	9	-2,37	28,93	104.19	4	21.37.28,95	3,269	
717	—	Oct. 3	9	-2,29	28,85					
718	—	22	9	-2,06	28,95					
719	B. (w.) XXI. 911 ...	18	9.10	-2,13		105.48	1	21.37.45,53	3,291	
720	$\delta$ Capricorni. ....	Nov. 1	7.8	-1,90		102.22	1	21.38.46,52	3,240	
721	B. (w.) XXI. 940 ...	Oct. 25	8 $\frac{1}{2}$	-1,96		98.41	1	21.38.55,97	3,189	
722	B. (w.) XXI. 965 ...	3	9	-2,27	5,09					
723	—	22	10	-2,04	5,37	102.19	2	21.40.52,3	3,238	
724	B. (w.) XXI. 974. ....	Aug. 5		-2,23		100.59	1	21.40.35,99	3,219	
725	B.A.C. 7599. ....	Sept. 24	7	-2,37	44,31					
726	—	Oct. 7	8	-2,25	44,10	103.24	3	21.41.44,22	3,251	
727	—	25	7	-2,02	44,25					
728	B.A.C. 7608. ....	3	7	-2,38		109.18	1	21.43.31,62	3,333	
729	B. (w.) XXI. 1038. ....	1	10	-2,34	53,24					
730	—	22	10	-2,09	53,12	104.37	2	21.43.53,18	3,266	
731	H. C. 42612. ....	Aug. 5		-2,22		100.1	1	21.44.39,66	3,202	
732	B. (w.) XXI. 1064. ....	Oct. 7	9.10	-2,27	58,08					
733	—	Nov. 1	9	-1,95	58,21	103.40	2	21.44.58,15	3,251	
734	B. (w.) XXI. 1146. ....	Oct. 1	8 $\frac{1}{4}$	-2,35	57,74					
735	—	18	9	-2,16	57,66	104.3	2	21.48.57,70	3,252	
736	B.A.C. 7640. ....	3	8	-2,35	47,13					
737	—	7	8 $\frac{3}{4}$	-2,31	46,95	105.49	2	21.49.47,04	3,274	
738	B. (w.) XXI. 1174. ....	22	9	-2,13		105.47	1	21.50.11,77	3,273	
739	B. (w.) XXI. 1179. ....	Nov. 1	8 $\frac{1}{2}$	-1,96		102.48	1	21.50.23,07	3,234	
740	B.A.C. 7648. ....	Sept. 24	7.8	-2,40		103.22	1	21.50.28,60	3,241	
741	B. (w.) XXI. 1187. ....	Aug. 5		-2,19		98.16	1	21.50.34,72	3,175	
742	B. (w.) XXI. 1228. ....	Oct. 1	10	-2,29	35,08					
743	—	3	10	-2,27	35,12	98.6	3	21.52.35,13	3,171	
744	—	18	10	-2,11	35,20					
745	B. (w.) XXI. 1249. ....	22	7 $\frac{3}{4}$	-2,14		105.2	1	21.53.29,09	3,259	
746	H. C. 42937. ....	Sept. 24	8	-2,37		99.59	1	21.54.18,90	3,193	
747	B. (w.) XXI. 1309. ....	Oct. 22	7 $\frac{1}{2}$	-2,16		105.10	1	21.56.30,49	3,257	
748	$\alpha$ AQUARI. ....					91.2	11	21.58.13,98	3,083	
749	B.A.C. 7704. ....	18	7.8	-2,12		96.33	1	21.59.59,34	3,147	
750	B. (w.) XXI. 1410. ....	1	10	-2,35	15,17					
751	—	3	10	-2,33	15,00	100.45	2	22.1.15,09	3,196	
752	H. C. 43188. ....	22	8 $\frac{3}{4}$	-2,19		105.51	1	22.1.50,97	3,258	
753	B. (w.) XXI. 87 ...	1	8 $\frac{1}{2}$	-2,52	58,76					
754	—	18	7	-2,15	58,75	97.12	3	22.4.58,73	3,152	
755	—	22	7.8	-2,11	58,67					
756	B. (w.) XXI. 119. ....	Nov. 1	9.10	-1,98		96.17	1	22.6.38,33	3,141	
757	B. (w.) XXI. 133. ....	Oct. 1	8	-2,23		97.28	1	22.7.11,10	3,154	
758	B. (w.) XXI. 167. ....	18	9.10	-2,23	37,92					
759	—	22	9	-2,18	38,07	102.24	2	22.8.38,00	3,208	
760	B. (w.) XXI. 192. ....	3		-2,39		102.58	1	22.9.46,93	+3,213	

No. 720. The seconds of R.A. by B.A.C. are 45,63. B. (w.) XXI. 933 gives 46,69.

No. 757. The R.A. from B. (w.) is 0,53 greater.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
761	B. (w.) XXII. 208 ..	Oct. 1	10	-2,40		102.50	1	22.10.44,61	+3,211	
762	B. (w.) XXII. 231 ..	18	8.9	-2,22		100.32	1	22.11.49,56	3,184	
763	B. (w.) XXII. 255 ..	25	9	-2,19		104.43	1	22.12.55,34	3,229	
764	B. (w.) XXII. 281 ..	1	8	-2,35	4,91	96.55	2	22.14.4,94	3,143	
765		3	8.9	-2,33	4,97					
766	B. (w.) XXII. 315 ..	Sept. 24	10	-2,37		95.14	1	22.15.49,29	3,124	
767	B. (w.) XXII. 345 ..	Oct. 25	8.9	-2,16		100.33	1	22.16.42,10	3,179	
768	H. C. 43719 .....	31	8	-2,12		103.42	1	22.16.52,83	3,212	
769	B. (w.) XXII. 363 ..	Nov. 1	10	-2,11		103.45	1	22.17.16,01	3,212	
770	B. (w.) XXII. 389 ..	Oct. 1	8½	-2,42	23,29	102.48	2	22.18.23,26	3,201	
771		22	8	-2,23	23,22					
772	B. (w.) XXII. 415 ..	Sept. 24		-2,47		103.1	1	22.19.38,33	3,202	
773	B. (w.) XXII. 417 ..	Oct. 25	8½	-2,14		96.47	1	22.19.41,11	3,138	
774	B. (w.) XXII. 444 ..	Nov. 1	10	-2,12		102.59	1	22.20.57,69	3,200	
775	B. (w.) XXII. 459 ..	Oct. 22	9	-2,23		102.16	1	22.21.53,45	3,191	
776	B. (w.) XXII. 463 ..	Nov. 8	9	-2,03		102.16	1	22.21.58,24	3,191	
777	B.A.C. 7835 .....	14	7	-1,97		103.40	1	22.22.9,89	3,205	
778	56 Aquarii .....	Oct. 25	7.8	-2,24		105.20	1	22.22.24,51	3,222	
779	H. C. 43946 .....	Sept. 24	8	-2,50		105.19	1	22.23.5,03	3,221	
780	B. (w.) XXII. 520 ..	Oct. 31	8	-2,08		95.56	1	22.24.57,63	3,127	
781	B. (w.) XXII. 548 ..	1	8½	-2,37	15,63					
782		Nov. 1	8½	-2,08	15,68	95.38	2	22.26.15,66	3,123	
783	B. (w.) XXII. 547 ..	Oct. 22	8.9	-2,26	16,10	102.55	2	22.26.16,16	3,193	
784		25	9	-2,23	16,22					
785	B. (w.) XXII. 589 ..	31	8	-2,12	10,44					
786		Nov. 8	8	-2,02	10,44	98.6	3	22.28.10,45	3,145	
787		17	9	-1,91	10,46					
788	B. (w.) XXII. 617 ..	Sept. 24	7.8	-2,48		102.29	1	22.29.18,17	3,185	No. 788. This is H. C. 44167, the R.A. of which is 10" too small. The middle wire should have been increased 10".
789	B. (w.) XXII. 630 ..	Oct. 1	9½	-2,47	5,43					
790		22	9	-2,29	5,37	103.58	3	22.30.5,41	3,198	
791		Nov. 1	10.11	-2,17	5,42					
792	B.A.C. 7892 sf. ....	Oct. 31	8½	-2,19	44,35					No. 792. The north-preceding companion was judged at the same time to be of Mag. 9.
793		Nov. 8	8	-2,09	44,30	103.22	3	22.31.44,36	3,190	No. 792-794. The R.A. agrees well with that obtained in 1852. See the note to No. 619 in p. 56.
794		14	8½	-2,02	44,44					
795	B. (w.) XXII. 695 ..	Oct. 1	10	-2,39		95.31	1	22.32.37,96	3,119	
796	B. (w.) XXII. 747 ..	Nov. 14	9	-2,03		103.7	1	22.35.9,44	3,183	
797	B. (w.) XXII. 748 ..	Oct. 31	8½	-2,20	13,10	103.6	2	22.35.13,10	3,183	
798		Nov. 1	8½	-2,19	13,09					
799	B. (w.) XXII. 752 ..	Oct. 22	8	-2,27		99.54	1	22.35.16,78	3,155	
800	H. C. 44423 .....	1	8.9	-2,37		93.27	1	22.35.22,11	3,100	
801	B.A.C. 7920 .....	Nov. 8	7½	-2,06	32,01	97.59	2	22.35.32,03	3,138	
802		17	8	-1,95	32,04					
803	H. C. 44506 .....	Sept. 24	8	-2,40		91.57	1	22.37.46,35	3,087	
804	B. (w.) XXII. 822 ..	Nov. 1	9.10	-2,15	10,45					
805		14	10	-2,00	10,52	96.42	3	22.39.10,45	3,125	
806		19	9.10	-1,93	10,39					
807	B. (w.) XXII. 828 ..	Oct. 1	9	-2,43	23,64	98.56	2	22.39.23,62	3,143	
808		22	9	-2,27	23,59					
809	B. (w.) XXII. 852 ..	Nov. 8	8.9	-2,09		99.9	1	22.40.22,13	3,144	
810	B. (w.) XXII. 855 ..	17	8	-1,98		98.53	1	22.40.41,46	3,142	
811	B. (w.) XXII. 889 ..	19	9.10	-1,92		93.8	1	22.42.9,17	3,095	
812	72 Aquarii .....	Oct. 22	7	-2,28		98.5	1	22.43.6,56	3,133	
813	* .....	Nov. 14	10	-2,03		98.2	1	22.43.40,89	3,132	No. 813. The N.P.D. was obtained by an Equatorial comparison with 72 Aquarii on Aug. 24, 1859. The star was then considered to be of the 9th Mag.
814	B. (w.) XXII. 933 ..	Oct. 31	7	-2,22	1,34	100.50	2	22.45.1,36	3,153	
815		Nov. 19	7	-2,00	1,38					
816	B. (w.) XXII. 962 ..	Oct. 22	8.9	-2,28		96.53	1	22.45.59,54	3,122	
817	B. (w.) XXII. 987 ..	Nov. 18	8½	-2,00	29,40	98.19	2	22.47.29,47	3,131	
818		19	8	-1,99	29,53					
819	B.A.C. 7993 .....	Oct. 22	7	-2,29		95.36	1	22.49.40,58	3,110	
820	* .....	3	8.9	-2,45		98.11	1	22.52.2,09	3,127	No. 820. The N.P.D. was obtained by an Equatorial comparison with 72 Aquarii on Aug. 24, 1859.
821	α PEGASI .....					75.35	19	22.57.26,48	2,978	
822	B. (w.) XXII. 1269 ..	Nov. 17	8	-2,03	13,53	91.5	2	23.0.13,49	3,077	
823		19	8	-2,01	13,45					
824	B. (w.) XXIII. 4 ....	14	7.8	-2,09		93.15	1	23.1.29,90	3,090	
825	B. (w.) XXIII. 13 ..	18	10	-2,06		94.46	1	23.2.1,62	3,099	
826	B. (w.) XXIII. 81 ..	18	10½	-2,05	32,41	91.14	2	23.5.32,45	3,077	No. 829. The seconds of R.A. by B. (w.) are 44,64, using the annual precession 3,100 instead of the erroneous value 3,045 in the Catalogue.
827		19	9.10	-2,04	32,49					
828	B. (w.) XXIII. 84 ..	17	8½	-2,12		99.42	1	23.5.49,06	3,124	
829	B. (w.) XXIII. 136 ..	14	8½	-2,13		95.20	1	23.7.45,20	+3,099	

Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1853, as observed.	Approximate N.P.D. Jan. 1, 1853.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1853.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
830	B. (w.) XXIII. 159..	Nov. 10	10	-2,20	1,71					No. 830-833. On Nov. 10 the star was obscured by cloud, and on Nov. 17 the sky was hazy. No reason is given by the observer for the different estimates of magnitude on Nov. 18 and 19.
831	_____	17	10	-2,12	1,98					
832	_____	18	11	-2,11	1,82	97.49	4	23.9.1,85	+3,111	
833	_____	19	9	-2,10	1,88					
834	B. (w.) XXIII. 210..	14	9	-2,12		90.50	1	23.10.45,75	3,075	
835	H. C. 45641 .....	19	9.10	-2,09		93.25	1	23.11.29,29	3,087	
836	B. (w.) XXIII. 261..	10	10	-2,22	2,17					
837	_____	14	8 $\frac{1}{4}$	-2,17	2,21	97.15	3	23.13.2,18	3,105	
838	_____	17	10	-2,14	2,15					
839	B. (w.) XXIII. 263..	Oct. 25	8.9	-2,37		97.26	1	23.13.6,93	3,106	
840	B. (w.) XXIII. 289..	Nov. 14	8 $\frac{1}{4}$	-2,18		97.17	1	23.14.17,64	3,104	No. 853. This is H. C. 46142. The seconds of R.A. by B. (w.) are 8 $\frac{3}{32}$ , and by H. C. 9,13.
841	B. (w.) XXIII. 304..	19	10	-2,29		95.51	1	23.15.13,74	3,097	
842	B. (w.) XXIII. 327..	Oct. 25	9	-2,33		90.30	1	23.16.24,75	3,073	
843	B. (w.) XXIII. 362..	Nov. 14	9	-2,15		90.17	1	23.18.3,94	3,072	
844	B. (w.) XXIII. 386..	19	10	-2,10		89.6	1	23.19.17,24	3,067	
845	B. (w.) XXIII. 409..	18	9.10	-2,14		93.15	1	23.20.34,58	3,084	
846	B. (w.) XXIII. 411..	Oct. 25	8 $\frac{1}{4}$	-2,39	41,19					
847	_____	Nov. 1	8 $\frac{1}{2}$	-2,33	41,27	96.38	3	23.20.41,15	3,097	
848	_____	10	9.10	-2,25	41,00					
849	B.A.C. 8184 .....	14	6.7	-2,20		95.20	1	23.21.56,21	3,091	
850	B. (w.) XXIII. 457..	Oct. 31	10	-2,31		90.59	1	23.22.48,83	3,074	
851	B. (w.) XXIII. 490..	Nov. 18	7.8	-2,16		91.54	1	23.24.25,04	3,078	
852	B. (w.) XXIII. 516..	17	10	-2,22		100.17	1	23.25.34,18	3,107	
853	B. (w.) XXIII. 530..	Oct. 25	10	-2,38		93.3	1	23.26.8,77	3,081	
854	B. (w.) XXIII. 579..	28	8 $\frac{3}{4}$	-2,39	12,68					
855	_____	31	8.9	-2,37	12,43					
856	_____	Nov. 1	9	-2,36	12,55	96.34	4	23.28.12,53	3,092	
857	_____	18	10 $\frac{1}{2}$	-2,20	12,44					
858	B. (w.) XXIII. 613..	17	10.11	-2,19		91.52	1	23.29.43,83	3,076	
859	B. (w.) XXIII. 642..	Oct. 31	7.8	-2,37		93.46	1	23.31.16,16	3,082	
860	B. (w.) XXIII. 682..	28	7.8	-2,38	9,36					No. 857. Bessel's Mag. is 8.9. The night of Nov. 18 was unfavorable for the estimation of magnitudes. No. 859. Not two stars. See the note of the observer, and No. 1155 in p. 115 of Vol. XVIII. Nos. 860 and 861. The seconds of R.A. by B. (w.) are 9 $\frac{3}{32}$ . H. C. 46375, which is the same star, gives 9 $\frac{3}{32}$ . Nos. 862 and 863. The seconds of R.A. by B. (w.) are 47 $\frac{1}{32}$ . H. C. 46512 gives 46 $\frac{1}{32}$ . No. 870. The seconds of R.A. by B. (w.) are greater by 0 $\frac{1}{32}$ , which is nearly the same excess as in the instances above of Nos. 860 and 862. The three stars are in the same zone, No. 34.
861	_____	Nov. 10	8 $\frac{1}{2}$	-2,27	9,15	90.24	2	23.33.9,26	3,072	
862	B. (w.) XXIII. 751..	Oct. 28	8	-2,39	46,75					
863	_____	Nov. 10	7.8	-2,29	46,63	90.6	2	23.36.46,69	3,071	
864	22 Piscium .....	Oct. 28	7	-2,41		87.53	1	23.44.26,45	3,067	
865	B. (w.) XXIII. 977..	28	9	-2,44	50,72					
866	_____	Nov. 18	10 $\frac{1}{2}$	-2,28	50,60	91.54	2	23.47.50,66	3,073	
867	H. C. 46938 .....	10	7.8	-2,34		87.45	1	23.49.34,67	3,068	
868	B. (w.) XXIII. 1066.	Oct. 28	9	-2,43	5,57					
869	_____	Nov. 18	9.10	-2,28	5,43	86.39	2	23.52.5,50	3,068	
870	B. (w.) XXIII. 1090.	10	8	-2,36		89.45	1	23.53.2,45	3,070	
871	B. (w.) XXIII. 1144.	Oct. 28	8 $\frac{1}{2}$	-2,47		93.44	1	23.55.15,34	3,072	
872	H. C. 47229 .....	Nov. 18		-2,31		87.13	1	23.57.50,64	+3,071	



APPARENT NORTH POLAR DISTANCES

OBSERVED WITH THE

MURAL CIRCLE

IN THE YEAR 1853.

Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Jan. 3	(a) B. (w.) I. 667....	3. 26,2	23,6	27,0	21,8	22,5	22,2	+11,9			155. 28. 25,23	29,779	42,8	38,0	56,34	81. 15. 18,07	B.
	B. (w.) I. 830....	4. 13,4	9,3	15,2	7,8	9,3	10,2				154. 19. 12,53				54,11	80. 6. 3,14	B.
	B. (w.) II. 15....	0. 62,8	60,9	62,2	57,3	59,0	58,5				149. 46. 0,52				46,05	75. 32. 43,07	B.
Jan. 5	⊙ N.L.....	0. 24,0	23,1	20,0	20,6	19,5	20,3		10,321		186. 30. 14,68	29,692	47,2	48,0	206,27	112. 19. 37,45	B.
	⊙ S.L.....	2. 49,6	48,0	48,8	46,4	48,5	46,6		10,321		187. 2. 42,40				213,87	112. 52. 12,77	B.
	B. (w.) III. 569...	3. 33,8	31,5	34,9	25,2	29,6	29,8				150. 48. 32,20	29,636	43,6	38,8	47,49	76. 35. 16,19	B.
	(b) * R. 3 <sup>h</sup> . 38 <sup>m</sup> . 35 <sup>s</sup> .	2. 28,8	24,9	27,8	22,3	22,8	22,8				140. 57. 25,85				32,68	66. 43. 55,03	B.
	(c) B. (w.) III. 884...	1. 8,6	7,1	7,8	4,0	4,1	3,7				149. 31. 6,32				45,34	75. 17. 48,16	B.
	H. C. 7434.....	2. 56,5	52,7	57,9	50,5	52,8	50,6				142. 12. 54,65				34,40	67. 59. 25,55	B.
	H. C. 7904.....	1. 18,2	15,2	16,6	12,1	13,3	12,5				140. 31. 15,15				32,10	66. 17. 43,75	B.
	H. C. 8122.....	3. 42,2	38,9	43,3	37,4	38,3	38,6				146. 18. 41,23				40,31	72. 5. 18,04	B.
	(d) Calliope.....	3. 26,2	20,3	26,3	19,1	20,5	20,2		9,352	+4	136. 48. 38,42	29,644	42,9	37,3	27,31	62. 35. 2,23	B.
	H. C. 9411.....	1. 57,7	54,2	57,1	52,3	53,9	54,1				148. 41. 55,65				44,17	74. 28. 36,32	B.
	H. C. 9517.....	0. 43,9	41,2	42,4	39,9	40,4	41,4				146. 10. 41,82				40,24	71. 57. 18,56	B.
	H. C. 9704.....	0. 22,2	19,2	20,6	15,6	16,9	17,5				135. 25. 18,78				25,68	61. 11. 40,96	B.
	(e) H. C. 9929.....	2. 37,0	35,0	37,5	30,3	33,3	27,2				139. 12. 34,40				30,47	64. 59. 1,37	B.
Jan. 6	Zenith Point....	2. 18,2	14,0	14,9	11,5	9,5	12,7		13,014		112. 1. 11,50						B.
	H. C. 7102.....	3. 21,8	19,5	24,0	16,3	18,5	17,1				142. 38. 20,85	29,535	42,8	39,0	34,85	68. 24. 52,20	B.
	(f) B. (w.) III. 959...	1. 20,9	20,0	22,2	17,2	18,5	19,1				149. 1. 20,15				44,37	74. 48. 1,02	B.
	H. C. 8051.....	0. 52,5	49,9	51,5	46,1	49,1	46,7				140. 50. 49,63				32,41	66. 37. 18,54	B.
	H. C. 8434.....	2. 46,4	42,8	46,7	39,8	43,4	40,4				140. 57. 44,33				32,57	66. 44. 13,40	B.
	H. C. 8654.....	1. 11,3	10,0	11,6	8,1	8,4	9,6				144. 46. 10,30	29,549	41,5	38,0	37,97	70. 32. 44,77	B.
	(g) H. C. 8917.....	2. 44,2	43,0	46,0	38,8	41,7	40,5				138. 27. 43,45				29,37	64. 14. 9,32	B.
	(f) B. (w.) IV. 896...	1. 62,9	61,5	63,9	59,0	60,4	61,2				148. 57. 2,28				44,37	74. 43. 43,15	B.
	H. C. 9411.....	1. 58,7	56,2	58,9	53,3	56,4	55,4				148. 41. 57,25				43,96	74. 28. 37,71	B.
	B.A.C. 1577.....	3. 62,3	58,0	64,4	56,2	58,2	57,5				136. 9. 1,02				26,45	61. 55. 23,97	B.
	H. C. 10977.....	3. 30,7	28,7	32,7	27,3	27,2	28,1				143. 8. 30,50				35,65	68. 55. 2,65	B.
	(h) H. C. 11070.....	4. 48,2	47,8	48,3	46,2	46,2	47,0				144. 44. 47,20				37,94	70. 31. 21,64	B.
Jan. 7	B. (w.) I. 948....	3. 42,0	39,0	41,9	36,6	38,0	37,0				150. 38. 40,53	29,280	44,0	41,7	46,37	76. 25. 23,40	B.
	B. (w.) I. 1070...	2. 26,3	23,6	26,1	22,2	21,8	22,8				158. 42. 24,75				61,52	84. 29. 22,77	B.
	B. (w.) II. 240...	3. 24,5	21,4	24,9	19,2	20,1	20,6				154. 3. 23,12				52,31	79. 50. 11,93	B.
	B. (w.) II. 319...	0. 46,0	42,5	44,3	40,7	42,0	42,7				152. 25. 43,32				49,40	78. 12. 29,22	B.
	B.A.C. 782.....	4. 42,0	40,5	39,6	38,2	39,1	40,0				145. 59. 41,77				39,12	71. 46. 17,39	B.
	B.A.C. 1096.....	2. 33,7	31,3	32,8	28,3	28,5	29,3				146. 52. 31,65	29,324	42,2	39,9	40,64	72. 39. 8,79	B.
	B. (w.) III. 603...	3. 56,0	52,4	56,5	49,9	52,9	50,4				151. 8. 54,57				47,45	76. 55. 38,52	B.
	B. (w.) III. 624...	...	...	...	...	...	...		6,061		151. 10. 16,73				47,50	76. 57. 0,73	B.
	(i) B. (w.) III. 737...	4. 15,3	11,4	17,0	10,4	11,5	10,3				150. 19. 12,65				46,07	76. 5. 55,22	B.
	H. C. 7102.....	3. 23,1	20,4	23,8	17,7	18,7	19,4				142. 38. 21,83				34,54	68. 24. 52,87	B.
	H. C. 7230.....	3. 10,9	8,2	11,3	7,1	6,1	5,9				143. 53. 9,48				36,28	69. 39. 42,26	B.
	H. C. 7759.....	1. 27,8	23,9	25,6	21,0	21,8	22,1				139. 46. 24,25				30,71	65. 32. 51,46	B.
	H. C. 7904.....	1. 18,4	14,6	16,7	11,7	13,0	13,0				140. 31. 15,07				31,69	66. 17. 43,26	B.
	H. C. 8051.....	0. 52,9	48,7	50,8	46,3	48,5	47,2				140. 50. 49,40				32,12	66. 37. 18,02	B.
	H. C. 8058.....	...	...	...	...	...	...		13,535		140. 49. 35,66				32,09	66. 36. 4,25	B.
	(k) * R. 4 <sup>h</sup> . 29 <sup>m</sup> . 18 <sup>s</sup> .	3. 61,2	56,5	61,8	54,8	56,9	55,1				141. 53. 59,28				33,53	67. 40. 29,31	B.
	H. C. 9517.....	0. 45,2	42,7	43,7	40,6	41,5	41,9				146. 10. 42,88			38,3	39,73	71. 57. 19,11	B.
	B.A.C. 1577.....	3. 65,3	59,4	65,4	57,4	59,4	57,7				136. 9. 2,35				26,23	61. 55. 25,08	B.
Jan. 8	(l) ⊙ S.L.....	4. 24,4	19,6	24,0	22,0	19,2	20,4		7,983		186. 40. 5,40	29,370	42,2	43,4	208,27	112. 29. 30,17	B.
	⊙ N.L.....	1. 60,5	57,0	58,6	56,4	55,6	54,5		7,983	+1	186. 7. 39,99				201,04	111. 56. 57,53	B.
	(m) H. C. 4925.....	2. 48,9	49,0	48,7	45,4	47,4	46,3				148. 7. 48,73	29,376	43,6	43,2	42,35	73. 54. 27,58	B.
	π Arietis.....	2. 25,3	23,4	24,6	22,2	22,4	21,9				147. 22. 24,25				41,19	73. 9. 1,94	B.
	α Ceti.....	2. 28,0	26,2	27,6	23,8	24,9	23,8				160. 42. 26,68				65,99	86. 29. 29,17	B.
	H. C. 6141.....	3. 16,7	16,0	17,3	13,6	14,0	14,1				144. 53. 16,57	29,385	43,7	42,5	37,58	70. 39. 50,65	B.
	B. (w.) III. 306...	2. 22,5	21,2	22,3	18,3	20,2	18,4				151. 7. 21,42				47,26	76. 54. 5,18	B.
	f Tauri.....	2. 31,5	29,0	31,8	26,8	28,2	27,2				151. 47. 30,07				48,40	77. 34. 14,97	B.
	9 Tauri.....	0. 15,2	12,2	12,5	8,4	10,6	9,8				141. 30. 11,52				32,89	67. 16. 40,91	B.

ONE REVOLUTION of the MICROMETER = 20'',859.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8'',00.

ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.

(a) 'The south-following star.' The other is B. (w.) I. 666. (b) 'Many others in the field.' (c) 'One north-preceding.' (d) Observed with the Transit by the same observer. (e) A faint double star preceded. (f) Very faint. (g) Cloud. (h) Negative correction for Runs. (i) 'One north-preceding.' The recorded Circle reading has been diminished 5'. (k) Observed by mistake for H. C. 8730. (l) Unsteady. (m) Hitherto the evening had been cloudy.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Jan. 8	(a) 17 Tanri.....	4. 42,1	40,0	39,0	35,6	38,6	36,5	+11,9			140. 34. 38,48	29,385	43,7	42,5	31,66	66. 21. 6,64			B.
	B.A.C. 1186.....	2. 54,6	51,2	54,4	47,8	51,0	47,9				140. 57. 52,28				32,17	66. 44. 20,95			B.
	B. (w.) III. 959..	1. 21,0	19,7	20,5	16,0	17,5	17,9				149. 1. 19,30				43,82	74. 47. 59,62			B.
	(b) Hygeia.....	1. 40,4	37,2	39,3	34,2	35,7	34,3		9,488	+3	141. 1. 48,67				32,26	66. 48. 17,44			B.
	H. C. 8249.....	4. 17,6	15,3	19,8	13,3	15,6	13,5				147. 29. 15,88				41,43	73. 15. 53,81			B.
	H. C. 8434.....	2. 47,0	42,8	46,2	40,6	43,1	40,1				140. 57. 44,38				32,17	66. 44. 13,05			B.
	Aldebaran R.....	1. 59,6	57,2	58,6	55,2	56,1	56,3		11,007	-1	256. 1. 36,89				42,24	73. 47. 24,85			B.
	Aldebaran.....	1. 9,4	8,9	9,5	5,9	6,6	6,4		11,007	+2	148. 0. 47,39					73. 47. 26,13			B.
	* R. 4 <sup>h</sup> . 56 <sup>m</sup> . 12 <sup>s</sup> .	0. 59,7	58,2	59,4	54,0	57,1	55,5		11,007		138. 0. 36,70	29,408	42,2	39,5	28,56	63. 47. 1,76			B.
	B.A.C. 1562.....	...	...	...	...	...	...		12,352		138. 0. 8,64				28,55	63. 46. 33,69			B.
	(c) Capella R.....	0. 13,5	12,7	12,3	9,6	7,8	10,6		13,187		285. 39. 4,69				6,54	44. 9. 21,35			B.
	(d) Capella.....	4. 24,9	25,7	24,8	22,4	21,6	20,6		13,187		118. 23. 16,62					44. 9. 19,66			B.
Jan. 11	(e) ☉ N.L.....	1. 22,0	21,6	20,5	19,3	19,5	20,0		10,743		185. 41. 5,52	29,468	45,5	44,6	195,60	111. 30. 17,67			B.
	☉ S.L.....	3. 50,0	49,0	48,5	46,8	46,6	44,8		10,743		186. 13. 33,63				202,48	112. 2. 52,61			B.
Jan. 12	(f) Zenith Point....	3. 26,6	22,0	27,2	22,8	21,9	20,6	+9,1	12,242		179. 22. 37,78								B.
Jan. 13	(e) ☉ S.L.....	1. 14,4	9,4	11,2	10,3	8,1	8,4		12,594		253. 15. 16,56	29,301	46,6	46,9	196,19	111. 43. 3,05			B.
	☉ N.L.....	3. 45,6	39,6	42,5	39,6	39,5	38,2		12,594		252. 42. 47,84				189,63	111. 10. 27,77			B.
Jan. 14	(e) ☉ N.L.....	3. 28,8	22,8	26,5	23,3	21,2	23,2		13,527		252. 32. 11,76	29,692	43,6	43,2	191,55	110. 59. 53,61			B.
	☉ S.L.....	0. 54,9	51,4	51,4	51,6	49,7	50,8		13,527		253. 4. 38,31				198,11	111. 32. 26,72			B.
	(g) B. (w.) II. 650...	3. 34,5	27,9	32,9	28,9	27,3	28,3				221. 23. 31,03	29,750	41,6	37,5	53,57	79. 48. 54,90			B.
	B. (w.) II. 746...	1. 42,8	38,3	41,2	38,1	38,2	38,9				218. 41. 40,08				48,71	77. 6. 59,09			B.
	ρ <sup>3</sup> Arietis.....	3. 51,4	44,6	49,9	45,1	44,9	43,8				214. 8. 47,77				41,30	72. 33. 59,37			B.
	(h) B. (w.) II. 947...	2. 31,0	26,2	29,9	26,9	25,5	27,0				219. 7. 28,50				49,46	77. 32. 48,26			B.
Jan. 18	(i) ☉ S.L.....	3. 20,0	12,1	15,4	11,9	10,1	12,8		9,200		252. 18. 31,39	29,782	41,0	40,5	190,56	110. 46. 12,25			C.
	☉ N.L.....	0. 54,8	48,2	50,0	47,4	46,2	48,1		9,200		251. 46. 6,06				184,48	110. 13. 40,84			C.
Jan. 19	(f) Zenith Point....	2. 63,8	57,3	64,3	59,1	58,3	57,0		11,115		179. 22. 37,62								T.
	(k) Zenith Point....	2. 48,5	44,1	47,5	43,8	45,1	40,7		10,475		179. 22. 35,87								C.
Jan. 20	(e) (i) ☉ N.L.....	4. 63,0	60,2	59,4	59,1	56,3	58,9		8,039		251. 20. 40,39	29,548	52,0	52,4	174,17	109. 48. 6,69			C.
	☉ S.L.....	2. 37,1	32,1	32,0	30,4	30,4	30,5		8,039		251. 53. 13,78				179,82	110. 20. 45,73			C.
Jan. 22	H. C. 5771.....	3. 32,2	25,0	31,0	25,9	25,1	25,3	+11,0	10,309		215. 13. 22,25	29,612	41,0	39,4	42,61	73. 38. 37,39			T.
	B. (w.) III. 119..	4. 31,3	22,6	30,0	23,1	23,3	24,5			+1½	217. 49. 27,53				46,82	76. 14. 46,88			T.
	H. C. 6141.....	4. 44,0	35,3	43,2	36,9	37,8	37,2				212. 14. 40,78				38,12	70. 39. 51,43			T.
	H. C. 6247.....	3. 9,7	3,0	8,4	3,9	2,1	1,7				215. 23. 5,93				42,86	73. 48. 21,32			T.
	(l) H. C. 6389.....	3. 16,7	8,9	13,4	8,3	8,0	8,7				211. 28. 11,83	29,622	40,8	39,0	37,04	69. 53. 21,40			T.
	(m) B. (w.) III. 495..	3. 47,0	39,4	45,3	38,8	39,1	39,1				217. 53. 42,85				47,00	76. 19. 2,38			T.
	B. (w.) III. 624...	1. 47,9	41,3	43,4	40,0	40,0	40,9				218. 31. 42,87				48,07	76. 57. 3,47			T.
	(n) B. (w.) III. 724...	3. 10,2	3,6	8,5	3,0	3,0	4,5				217. 38. 6,60				46,56	76. 3. 25,69			T.
	B. (w.) III. 737...	...	...	...	...	...	...		2,734		217. 40. 38,16				46,63	76. 5. 57,32			T.
	B. (w.) III. 878...	0. 9,5	5,1	6,7	5,0	3,4	4,0				216. 50. 5,65				45,24	75. 15. 23,42			T.
	B. (w.) III. 884...	...	...	...	...	...	...		2,979		216. 52. 32,10				45,30	75. 17. 49,93			T.
	H. C. 7480.....	0. 14,0	9,6	11,0	7,5	7,6	6,8				210. 55. 9,48	29,640	40,6	38,6	36,31	69. 20. 18,32			T.
	(d) H. C. 7712.....	4. 31,2	27,6	29,1	24,9	25,7	25,0				207. 59. 27,05				32,27	66. 24. 31,85			T.
	H. C. 7904.....	2. 43,0	37,9	41,9	36,1	37,5	35,1				207. 52. 39,57				32,12	66. 17. 44,22			T.
	H. C. 8122.....	0. 10,0	5,5	6,9	4,0	4,1	2,7				213. 40. 5,57				40,33	72. 5. 18,43			T.
	(d) δ <sup>8</sup> Tauri.....	4. 38,3	33,3	33,2	30,7	29,9	32,6				213. 59. 32,83				40,82	72. 24. 46,18			T.
	(d) H. C. 8434.....	4. 12,1	8,0	9,4	6,3	6,4	5,3				208. 19. 7,60				32,71	66. 44. 12,84			T.
Jan. 24	(o) Zenith Point....	2. 39,6	32,1	39,1	33,2	32,8	32,5		10,017		179. 22. 35,47								T.
Jan. 27	☉ S.L.....	2. 30,3	24,1	28,8	25,1	23,0	26,1		9,033		250. 12. 47,29	29,782	39,6	40,6	168,76	108. 40. 8,58			T.
	☉ N.L.....	0. 6,9	1,2	2,2	0,1	0,0	2,7		9,033		249. 40. 22,37				163,85	108. 7. 38,75			T.

ONE REVOLUTION of the MICROMETER = 20".859. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6. ASSUMED CO-LATITUDE = 37°. 47'. 8".00.

Jan. 12, the Circle was taken from the wall to clean its axis. The Telescope was then shifted on the Circle, and the Microscopes were adjusted. The Micrometer-wire was adjusted equatorially on Jan. 20.

(a) Negative correction for Runs. The Circle reading has been increased 5'. (b) 'Good.' (c) Wet dropping on the mercury, but the image was steady when bisected. (d) Negative correction for Runs. (e) Great motion. (f) The mean of these Zenith Points is adopted. The former was taken with the mercury tremulous from high wind, and before the latter an unsuccessful attempt was made to adjust the micrometer-wire equatorially. (g) Very faint from cloud. (h) 'One south-preciding.' (i) Microscopes read off by T. (k) This Zenith Point was taken after adjusting the distance of the wire-frame from the object-glass. See the Introduction. (l) The recorded Circle reading was 10' greater. The star is B. z. 391, 3<sup>h</sup>. 19<sup>m</sup>. 30<sup>s</sup>, which agrees in N.P.D. with II. C. (m) Faint and observed doubtfully. (n) 'No star answering to Bessel's R.A.' (o) Good circumstances.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		o' " "			
																"	"	"	
Jan. 31	⊙ N.L.....	0.24,9	18,8	22,2	18,6	19,6	20,9	+11,0	9,251		248.35.36,59	30,094	41,0	42,3	155,82	107.2.44,94	T.		
	⊙ S.L.....	2.48,5	41,2	46,1	40,2	41,8	41,3		9,251		249.7.59,82				160,28	107.35.12,63	T.		
Feb. 2	⊙ S.L.....	2.33,0	25,6	31,4	25,5	26,5	26,5	+9,3	6,415		248.33.43,63	30,050	38,5	37,6	156,88	107.0.53,21	T.		
	⊙ N.L.....	0.10,7	4,9	6,9	2,0	2,7	4,7		6,415		248.1.20,13				152,61	106.28.25,44	T.		
	(a) H. C. 9220.....	3.63,0	60,2	61,9	57,8	59,8	56,5				207.49.1.10	29,962	36,0	31,4	32,88	66.14.6,68	T.		
	η Aurigæ R.....	2.50,3	43,0	49,4	42,3	44,0	43,1		12,669	+1 3/4	348.11.50,13				12,00	48.58.5,17	T.		
	η Aurigæ.....	4.15,0	7,6	16,1	7,8	8,9	5,9		12,669	+4	190.33.17,95					48.58.2,65	T.		
	H. C. 9872.....	4.17,9	10,0	18,4	10,2	11,5	8,5				203.39.14,07				27,38	62.4.14,15	T.		
	H. C. 10007.....	3.25,0	17,4	24,7	17,0	17,9	15,0				202.38.20,53				26,10	61.3.19,33	T.		
	H. C. 10390.....	3.43,3	36,9	43,3	35,9	36,9	34,2				207.3.39,55	29,962	35,9	31,0	31,88	65.28.44,13	T.		
	H. C. 10570.....	2.53,1	45,1	50,7	43,6	47,0	42,9				203.12.47,93				26,84	61.37.47,47	T.		
	H. C. 10679.....	2.58,4	51,0	58,9	51,3	52,8	49,5		6,209	+2	205.24.13,92				29,67	63.49.16,29	T.		
	H. C. 10686.....	...	...	...	...	...	...				205.22.54,55				29,64	63.47.56,89	T.		
	H. C. 10889.....	0.54,8	50,0	54,1	48,9	50,5	46,2				209.45.51,00				35,63	68.10.59,33	T.		
	H. C. 11070.....	1.13,0	6,3	11,0	5,1	8,1	4,9				212.6.8,42				39,04	70.31.20,16	T.		
	(b) H. C. 11200.....	1.61,2	53,9	59,9	53,5	55,6	52,0				212.21.56,62				39,43	70.47.8,75	T.		
	H. C. 11213.....	...	...	...	...	...	...		6,150		212.23.16,93				39,47	70.48.29,10	T.		
	ν Orionis R.....	2.59,1	52,0	58,3	52,0	52,4	52,2		11,600		321.57.21,86			31,2	46,45	75.13.7,89	T.		
	ν Orionis.....	3.27,0	18,0	26,1	18,3	18,4	18,8		11,600		216.47.48,78					75.13.7,93	T.		
Feb. 5	(c) ⊙ N.L.....	2.49,3	42,9	46,3	41,1	41,6	42,1		9,792		247.7.49,07	29,764	38,5	39,0	144,15	105.34.45,92	T.		
	⊙ S.L.....	0.12,9	7,1	8,7	5,1	5,4	7,1		9,792		247.40.12,09				148,06	106.7.12,85	T.		
Feb. 7	Zenith Point....	2.32,2	25,0	32,1	24,7	24,9	25,9		9,662		179.22.35,30						T.		
Feb. 11	(a) ⊙ S.L.....	4.47,3	42,9	43,1	41,1	41,7	43,7		6,379		245.45.58,75	29,304	35,9	33,5	134,48	104.12.45,93	T.		
	⊙ N.L.....	2.26,2	18,5	23,0	18,0	17,1	19,3		6,379		245.13.36,60				131,14	103.40.20,44	T.		
Feb. 14	H. C. 10917.....	2.24,7	18,0	23,9	17,5	17,1	17,0		12,545		204.16.27,33	29,744	28,3	26,0	28,30	62.41.28,33	T.		
	(d) α Orionis R.....	3.26,1	18,3	23,7	17,1	15,9	19,9		10,481		314.33.11,17				60,54	82.37.32,67	T.		
	α Orionis.....	2.13,1	4,3	9,1	4,5	3,2	6,8		10,481		224.11.57,47					82.37.30,71	T.		
	(e) H. C. 11413.....	2.58,3	51,5	59,5	51,5	53,7	49,0				209.12.54,82				34,97	67.38.2,49	T.		
	H. C. 11421.....	...	...	...	...	...	...		5,412		209.14.30,52				35,00	67.39.38,22	T.		
	H. C. 11627.....	2.16,2	9,5	16,1	9,1	9,8	8,9				204.22.12,28				28,42	62.47.13,40	T.		
	(e) H. C. 11752.....	1.62,9	56,0	62,0	54,1	57,8	54,0			+2 1/2	213.46.58,72				41,74	72.12.13,16	T.		
	H. C. 11756.....	...	...	...	...	...	...		8,403	+2 1/2	213.47.32,03				41,76	72.12.46,49	T.		
	H. C. 12007.....	1.68,9	60,2	66,0	59,7	60,5	63,1				214.12.3,72	29,746	28,0	25,7	42,43	72.37.18,85	T.		
	(f) H. C. 12158.....	0.45,3	38,1	42,9	36,8	39,0	36,1				208.25.39,92				33,89	66.50.46,51	T.		
	H. C. 12339.....	1.32,4	25,2	31,1	24,7	25,3	25,7				204.31.27,87				28,64	62.56.29,21	T.		
	(g) H. C. 12483.....	3.51,0	42,1	50,0	43,6	44,5	41,0				203.23.46,53				27,19	61.48.46,42	T.		
	H. C. 12496.....	...	...	...	...	...	...		10,415		203.23.37,87				27,18	61.48.37,75	T.		
	(h) H. C. 12700.....	0.23,9	18,0	22,3	16,0	16,6	16,1				206.55.18,92				31,82	65.20.23,44	T.		
	H. C. 12896.....	1.61,3	55,6	61,5	53,6	57,1	52,9				212.46.57,62				40,23	71.12.10,55	T.		
	H. C. 13065.....	1.30,8	24,5	29,7	23,0	24,1	23,1				210.51.26,32	29,748	28,4	25,4	37,38	69.16.36,40	T.		
	37 Geminorum.....	1.41,0	34,1	40,0	32,0	34,2	33,0				206.1.36,20				30,64	64.26.39,54	T.		
	H. C. 13422.....	1.54,8	48,9	54,0	46,1	49,3	46,5				210.16.50,50				36,54	68.41.59,74	T.		
	* R. 6 <sup>h</sup> . 54 <sup>m</sup> . 12 <sup>s</sup> .....	0.39,4	32,9	37,2	30,3	32,7	30,9				204.40.34,08				28,86	63.5.35,64	T.		
	H. C. 13758.....	3.20,0	10,0	19,1	10,8	10,9	11,9				215.33.14,78				44,63	73.58.32,11	T.		
	(a) H. C. 13889.....	4.66,1	62,1	65,0	60,3	60,3	59,0				211.5.2,13				37,71	69.30.12,54	T.		
	(a) H. C. 14108.....	4.46,1	40,9	43,5	38,0	41,5	38,6				210.34.41,33				36,97	68.59.51,00	T.		
	(i) H. C. 14393.....	2.61,9	55,0	62,0	54,3	57,1	52,5				210.47.58,05	29,750	28,6	26,0	37,25	69.13.8,00	T.		
	(k) Castor R.....	2.62,0	54,9	61,6	55,1	55,4	55,9		11,391	+1 1/2	339.22.29,17				22,20	57.47.36,33	T.		
	(l) Castor.....	3.10,6	3,0	10,9	3,4	4,7	3,0		11,391	+3	199.22.38,71					57.47.33,61	T.		
	(m) Pollux R....	4.21,0	12,0	21,1	14,1	11,7	13,6		14,199		335.32.49,31				26,93	61.37.20,92	T.		
	Pollux.....	3.51,5	45,0	51,0	44,0	45,1	42,3		14,199		203.12.20,08					61.37.19,71	T.		
Feb. 15	(n) ⊙ S.L.....	0.9,0	4,2	4,1	2,7	2,2	4,0	10,2			244.25.4,40	29,748	33,9	33,0	128,43	102.51.45,66	T.		
Feb. 16	⊙ N.L.....	2.7,0	1,2	4,0	1,0	1,3	1,9		10,035		243.32.2,70	29,744	34,1	34,4	123,08	101.58.38,61	T.		
	(a) ⊙ S.L.....	4.27,8	24,0	21,9	21,0	21,0	23,3		10,035		244.4.22,22				126,06	102.31.1,11	T.		

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Negative correction for Runs. (b) The south-preceding of a coarse double star. (c) 'Not good.' (d) Bad circumstances: the mercury agitated by wind. (e) 'The north-preceding star.' (f) 'The north-following of a coarse double star.' (g) 'South-preceding the next by about 14s.' (h) 'A brighter north-following.' (i) 'The south-preceding of a neat double star. The other is H. C. 14394.' (k) The mercury unsteady. (l) Hurried b section. (m) Cloudy after this. (n) N.L. lost by wrong setting.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5".	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	o' "	"	
		" "	" "	" "	" "	" "	" "						" "	" "					
Feb.16	H. C. 11839.....	3.12,9	7,5	12,1	5,0	7,9	5,0	+10,2			213.38. 9,47	29,762	32,5	29,5	41,23	72. 3. 23,53	T.		
	H. C. 12053.....	0.55,0	51,8	54,8	49,9	51,2	48,0				210.25.52,07				36,46	68.51. 1,36	T.		
	H. C. 12217.....	2.49,2	45,0	50,0	43,5	45,4	41,7				207.47.46,75				32,76	66.12.52,34	T.		
	H. C. 12396.....	1.56,0	48,7	52,9	47,9	47,1	48,9			213.51.50,87				41,58	72.17. 5,28	T.			
	22 Geminorum..	2.35,9	30,2	35,0	28,8	30,1	27,5			212. 2.32,10				38,81	70.27.43,74	T.			
	(a) H. C. 13889.....	4.65,7	63,2	63,0	60,5	60,7	58,9			211. 5. 2,00	29,756	32,0	28,5	37,47	69.30.12,30	T.			
	H. C. 14192.....	2.48,1	41,0	46,1	42,0	41,1	42,6			216. 7.44,42				45,29	74.33. 2,54	T.			
	H. C. 14369.....	1.56,1	49,0	53,4	47,9	47,9	49,0			215.46.51,17				44,72	74.12. 8,72	T.			
	(b) * $\Lambda$ . 7 <sup>h</sup> . 16 <sup>m</sup> . 19 <sup>s</sup> .	...	...	...	...	...	...		10,804	215.46.34,40				44,71	74.11.51,94	T.			
	Castor R.....	2.48,3	40,1	48,4	42,2	41,1	42,2		10,669	339.22.30,69				22,09	57.47.34,57	T.			
	Castor .....	2.56,8	50,3	56,3	50,3	51,1	50,1		10,669	199.22.39,51					57.47.34,43	T.			
	Pollux R.....	4.11,9	3,6	11,3	3,4	3,1	5,7		13,775	335.32.49,16				26,79	61.37.20,80	T.			
	Pollux .....	3.42,9	35,8	41,1	35,9	35,1	33,0		13,775	203.12.19,81					61.37.19,43	T.			
Feb.17	H. C. 9786.....	0.29,0	24,9	28,5	22,3	22,7	23,2			205.50.25,23	29,504	32,0	30,0	29,85	64.15.27,91	T.			
	H. C. 9809.....	...	...	...	...	...	...		17,721	205.47.44,18				29,79	64.12.46,80	T.			
	H. C. 10080.....	3.23,9	17,5	23,0	15,5	17,3	16,0			211.43.20,00				37,97	70. 8.30,80	T.			
	B.A.C. 1703.....	0.65,1	58,3	61,7	57,5	56,5	58,7			215.15.59,97				43,37	73.41.16,17	T.			
	H. C. 10252.....	...	...	...	...	...	...		7,974	215.16.42,23				43,39	73.41.58,45	T.			
Feb.19	(c) $\odot$ S.L.....	0.27,1	23,6	24,5	20,3	18,8	23,5		8,262	243. 0.59,35	29,593	27,3	21,3	123,12	101.27.35,30	T.			
	$\odot$ N.L.....	3. 9,4	3,1	7,3	1,2	1,4	2,3		8,262	242.28.41,42				120,29	100.55.14,54	T.			
	(c) H. C. 16110.....	3.32,7	25,4	32,9	25,9	24,1	26,9			215. 3.29,17	29,648	24,4	17,4	44,44	73.28.46,44	T.			
	H. C. 16327.....	1.27,1	23,2	25,0	18,5	20,8	19,0			213.16.22,75				41,58	71.41.37,16	T.			
	(d) B.A.C. 2810.....	0.16,8	13,0	16,4	10,0	10,0	7,9			213.55.12,42				42,60	72.20.27,85	T.			
Feb.21	H. C. 13363.....	0. 9,0	4,9	5,9	1,4	3,4	1,6			+1	206.45. 4,47	30,042	31,4	30,3	31,59	65.10. 8,89	T.		
	H. C. 13611.....	0.33,9	29,6	32,3	26,7	29,8	25,7			209.55.29,83				36,00	68.20.38,66	T.			
	H. C. 15939.....	3.24,4	17,0	23,9	15,8	15,5	16,1				30,044	30,5	29,3	46,50	75. 3.39,25	T.			
	H. C. 16099.....	3.32,8	27,3	33,5	24,9	27,8	25,4			+1½	210. 3.29,94				36,27	68.28.39,04	T.		
	B. (w.) x. 37.....	1.11,1	4,7	7,1	2,1	2,3	2,9			225.36. 5,40	30,030	29,4	27,7	63,94	84. 1.42,17	T.			
	B. (w.) x. 134...	2.35,4	27,0	33,1	26,7	26,6	28,3			+2½	223.42.30,50				59,86	82. 8. 3,19	T.		
	H. C. 20080.....	0.45,9	40,1	42,8	37,3	37,7	39,0			219.45.40,70				52,13	78.11. 5,66	T.			
	B. (w.) x. 315...	3.46,5	39,3	45,9	38,1	38,1	39,9			226.53.42,55				66,90	85.19.22,28	T.			
	B. (w.) x. 396...	0.42,3	36,9	38,9	33,2	35,0	36,3			222.55.37,30				58,25	81.21. 8,38	T.			
	B. (w.) x. 496...	2.29,0	22,8	27,0	21,3	20,0	23,0			219.32.24,67				51,73	77.57.49,23	T.			
	Zenith Point....	2.26,1	20,6	25,8	19,9	19,2	20,3		9,406	179.22.35,17						T.			
	Feb.22	H. C. 10700.....	0.33,9	29,5	30,8	27,3	27,0	29,1			+2	215.25.29,94	29,856	33,0	34,0	43,77	73.50.46,54	T.	
		H. C. 10889.....	0.54,9	52,7	55,0	49,9	50,7	47,9			209.45.52,13				35,28	68.11. 0,24	T.		
H. C. 11070.....		1.12,9	8,0	10,9	5,9	6,9	5,8			212. 6. 8,80				38,65	70.31.20,28	T.			
(e) H. C. 11200.....		1.57,9	53,5	57,7	51,3	53,6	49,8			212.21.54,62				39,04	70.47. 6,49	T.			
H. C. 11213.....		...	...	...	...	...	...		6,111	212.23.15,74				39,08	70.48.27,65	T.			
H. C. 11384.....		4.18,4	12,0	17,7	10,6	10,7	11,5			214.39.14,93				42,55	73. 4.30,31	T.			
(f) H. C. 11752.....		2.36,6	32,9	37,1	29,7	31,0	29,0		11,587	+2	213.47. 0,70				41,19	72.12.14,72	T.		
H. C. 11756.....		...	...	...	...	...	...			+2½	213.47.33,90				41,21	72.12.47,94	T.		
Feb.23	$\odot$ N.L.....	1.38,8	34,0	36,4	32,3	31,0	35,2		9,025	241. 1.55,49	29,427	36,0	39,0	103,38	99.28.16,70	T.			
	$\odot$ S.L.....	3.56,1	48,8	53,0	46,9	48,8	49,0		9,025	241.34.12,07				110,84	100. 0.35,74	T.			
	H. C. 12597.....	4.41,5	36,0	42,9	35,3	37,2	33,4			+2	210.34.39,53	29,362	31,8	23,6	36,24	68.59.48,60	T.		
	H. C. 12871.....	0.28,9	26,1	28,1	23,1	24,3	22,9			213.35.25,70				40,69	72. 0.39,22	T.			
	(g) H. C. 13015.....	0.48,0	42,7	45,1	41,7	41,1	42,8			215.10.43,82				43,16	73.35.59,81	T.			
	B.A.C. 2243.....	0.49,3	44,7	47,0	41,9	43,8	41,4			206. 5.44,93				30,13	64.30.47,89	T.			
Feb.25	(a) $\odot$ S.L.....	4.42,7	37,1	38,0	34,4	35,6	37,1		9,284	240.49.52,29	29,577	36,7	37,0	108,49	99.16.13,61	T.			
	$\odot$ N.L.....	2.25,9	19,0	23,5	17,0	17,9	21,7		9,284	240.17.36,57				106,12	98.43.55,52	T.			
Feb.28	(a) $\odot$ N.L.....	4.47,7	45,1	43,9	40,7	43,2	42,9		8,871	239.10. 7,38	29,822	36,5	36,5	102,36	97.36.22,57	T.			
	$\odot$ S.L.....	1.63,7	59,4	60,0	56,9	57,9	57,9		8,871	239.42.23,53				104,59	98. 8.40,95	T.			

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'Following H. C. 14369 by 14½'. (c) Unusually low temperature. (d) 'One preceded,' viz. H. C. 16437.  
 (e) 'The south-preceding of a coarse double star.' (f) 'The north-preceding star.' (g) The observation was not satisfactory.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.		Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	
		"	"	"	"	"	"						Inch.	"				
Feb. 28	H. C. 13758.....	3.18,6	10,8	17,9	11,1	10,1	12,1	+10,2			215.33.14,53	29,770	33,1	32,0	44,04	73.58.31,40	T.	
	(a) 48 Geminorum..	2.44,5	40,0	44,1	36,5	37,9	35,9			+1½	207.12.40,87				31,81	65.37.45,51	T.	
	H. C. 14108.....	4.44,0	37,9	46,1	36,4	38,9	35,6				210.34.41,40				36,48	68.59.50,71	T.	
	58 Geminorum..	1.30,0	25,8	29,1	23,4	24,2	22,3				208.21.26,28				33,36	66.46.32,47	T.	
	(b) H. C. 14350.....	...	...	...	...	...	...		7,695	+1	208.22.14,43				33,38	66.47.20,64	T.	
	H. C. 14668.....	2.17,0	10,6	15,1	9,1	9,1	11,1			+2½	215.17.13,02				43,61	73.42.29,46	T.	
	(c) * R. 7 <sup>h</sup> . 28 <sup>m</sup> . 59 <sup>s</sup>	3.10,8	5,6	11,9	5,1	7,2	3,8				209.23.8,45				34,79	67.48.16,07	T.	
	Pollux R.....	3.12,1	5,3	11,7	6,4	4,3	4,9		10,862		335.32.50,54	29,772	33,4	32,1	26,60	61.37.19,23	T.	
	Pollux.....	2.42,9	37,9	42,0	34,2	35,9	35,0		10,862		203.12.20,90					61.37.20,33	T.	
	H. C. 15323.....	1.42,5	37,0	41,0	34,9	34,9	35,9				211.1.38,27				37,12	69.26.48,22	T.	
	H. C. 15459.....	3.41,0	34,9	41,0	33,2	34,0	35,3				210.13.37,80				35,98	68.38.46,61	T.	
	5 Cancri.....	3.26,5	19,0	25,1	17,0	16,5	18,7				214.43.21,60				42,71	73.8.37,14	T.	
	H. C. 15809.....	3.15,7	9,1	16,0	8,3	9,3	7,0				208.23.11,98				33,40	66.48.18,21	T.	
	H. C. 15939.....	3.24,3	17,0	23,0	16,1	15,7	17,7				216.38.20,10				45,81	75.3.38,74	T.	
	H. C. 16110.....	3.33,0	25,7	33,1	24,8	35,0	26,0				215.3.30,78				43,24	73.28.46,85	T.	
	B. (w.) VIII. 232.	4.15,1	6,9	14,6	5,1	7,2	7,9				217.29.10,88				47,23	75.54.30,94	T.	
	H. C. 16379.....	2.46,7	39,1	43,6	36,0	37,1	39,1				217.22.41,17				47,04	75.48.1,04	T.	
	H. C. 16554.....	1.63,4	57,1	63,3	55,0	57,2	54,9			+1	207.56.59,24				32,80	66.22.4,87	T.	
Mar. 1	H. C. 11281.....	0.32,0	28,0	31,1	26,0	26,1	24,2	+10,1			209.50.28,07	29,626	33,0	30,9	35,34	68.15.36,09	T.	
	ν Orionis R.....	2.38,3	32,5	37,9	32,1	31,7	33,1		10,659	+2	321.57.21,22				45,96	75.13.8,06	T.	
	ν Orionis.....	2.65,7	58,1	64,5	58,4	57,7	57,7		10,659	+4	216.47.48,26					75.13.6,90	T.	
	f Orionis.....	3.48,1	40,7	47,1	39,1	39,8	39,6				215.23.43,67				43,67	73.49.0,02	T.	
	H. C. 12007.....	2.11,6	3,8	9,1	2,2	2,4	2,2				214.12.5,92				41,79	72.37.20,39	T.	
	(d) H. C. 12158.....	0.45,1	39,8	43,2	37,0	39,2	36,9				208.25.40,42				33,38	66.50.46,48	T.	
	(e) 16 Geminorum..	4.64,4	60,7	64,0	57,9	59,9	58,1				211.0.0,83				37,00	69.25.10,51	T.	
	Sirius R.....	0.64,1	59,1	61,3	57,7	57,4	57,1		9,810		290.41.3,74	29,625	32,8	30,6	153,07	106.31.12,65	T.	
	(e) Sirius.....	4.9,0	4,0	4,9	0,9	2,1	2,7		9,810		248.4.7,59					106.31.13,34	T.	
	B.A.C. 2243.....	0.50,7	45,7	48,1	41,9	44,7	42,3				206.5.45,82				30,27	64.30.48,77	T.	
	H. C. 13363.....	0.10,1	4,6	6,9	1,5	2,9	1,8				206.45.4,67				31,13	65.10.8,48	T.	
	(f) B.A.C. 2283.....	1.33,9	28,1	33,0	25,7	27,4	25,8				207.56.29,48				32,73	66.21.34,89	T.	
Mar. 8	(g) H. C. 17312.....	0.46,2	41,7	43,9	38,1	40,9	36,9			+2	210.20.41,75	29,996	42,6	40,0	35,81	68.45.50,24	T.	
	B. (w.) VIII. 1210	2.47,7	40,0	45,0	37,7	40,0	37,7				217.27.42,25				46,76	75.53.1,69	T.	
	(e) B. (w.) VIII. 1299	4.66,2	60,7	61,4	57,3	58,7	56,3			+3	220.10.0,38				51,47	78.35.24,53	T.	
	B.A.C. 3103.....	2.57,9	50,1	55,7	48,6	51,1	45,7				213.52.52,50				41,02	72.18.6,20	T.	
	B.A.C. 3464.....	0.60,7	52,8	56,5	53,0	52,8	51,0				221.15.54,78	30,016	40,7	38,5	53,70	79.41.21,16	T.	
	(e) B. (w.) x. 161....	4.54,7	47,1	48,8	45,1	47,1	48,2				223.19.48,45				57,72	81.45.18,85	T.	
	B. (w.) x. 169....	...	...	...	...	...	...		11,429		223.19.18,64				57,70	81.44.49,02	T.	
	H. C. 20183.....	0.41,9	34,6	37,0	33,1	33,4	33,1				219.40.35,72				50,78	78.5.59,18	T.	
	B. (w.) x. 297....	...	...	...	...	...	...		9,899		219.40.37,83				50,78	78.6.1,29	T.	
	H. C. 20381.....	1.29,8	22,7	26,3	23,1	20,9	20,7				220.46.24,40				52,78	79.11.49,86	T.	
	(h) B. (w.) x. 496....	2.31,6	22,4	27,3	22,1	22,1	22,0				219.32.25,40				50,54	77.57.48,62	T.	
	B. (w.) x. 593....	0.40,0	31,8	35,2	31,2	30,9	31,2				228.0.33,57				67,96	86.26.14,21	T.	
	(i) Zenith Point....	2.31,7	23,5	30,1	22,5	21,9	22,0		9,558		179.22.35,32						T.	
Mar. 9	(k) ⊙ S.L.....	3.57,9	48,8	55,1	47,9	49,1	47,0		8,419	+2	236.14.25,75	30,108	45,1	50,7	89,55	94.40.27,98	T.	
	⊙ N.L.....	1.48,1	39,9	44,0	37,9	38,4	37,8		8,419	+2	235.42.15,08				87,75	94.8.15,51	T.	
Mar. 10	(l) * R. 6 <sup>h</sup> . 54 <sup>m</sup> . 12 <sup>s</sup>	0.38,9	32,1	34,1	30,8	30,2	28,9				204.40.32,68	30,172	44,8	43,5	28,17	63.5.33,53	T.	
	(m) * R. 7 <sup>h</sup> . 0 <sup>m</sup> . 24 <sup>s</sup>	3.28,0	20,6	27,6	19,0	20,7	16,7		14,740	+1	212.16.44,43				38,55	70.41.55,66	T.	
	H. C. 13818.....	...	...	...	...	...	...				212.18.23,25				38,60	70.43.34,53	T.	
Mar. 11	(n) ⊙ N.L.....	4.27,7	20,1	24,2	20,1	16,1	17,7		7,325		234.55.18,25	30,140	45,6	49,1	85,59	93.21.16,52	T.	
	⊙ S.L.....	1.37,9	31,0	32,2	31,0	27,9	31,3		7,325		235.27.28,20				87,32	93.53.28,20	T.	
	(e) B.A.C. 2184.....	4.5,9	8,7	8,7	6,1	6,0	6,2		13,378		215.2.56,17	30,098	43,8	40,4	42,94	73.28.13,02	T.	
	H. C. 13122.....	1.12,0	14,0	16,8	11,9	11,9	12,2				205.31.13,53				29,37	63.56.16,81	T.	
	37 Geminorum..	1.33,6	35,0	37,2	32,0	33,0	30,9				206.1.34,15				30,03	64.26.38,09	T.	
	B.A.C. 2280.....	1.26,4	27,6	30,7	25,3	25,9	26,1				215.26.27,48				43,56	73.51.44,95	T.	

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) 'A fainter northward.' (b) 'The south-preceding of two.' (c) Observed for H. C. 14817. See the Catalogue of N.P.D. (d) 'A fainter south-preceding.' (e) Negative correction for Runs. (f) Seen only a few seconds: cloudy. (g) The instrument dripping with moisture. (h) 'Extremely faint: a brighter north-preceding,' viz. B. w.) x. 492. (i) The images being unsteady, the measures were repeated, but with the same result. (k) Not good: the shutter not enough open. (l) The star observed with the Circle on Feb. 14. (m) 'Preceding the next about 10<sup>s</sup>,' for which it was observed with the Transit on Feb. 14. (n) My astronomical class came into the Circle Room in the afternoon: the Zenith Point seems to have changed.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"		
		"	"	"	"	"	"						"	"	"		0	"	
Mar.11	H. C. 13644.....	1. 54,4	55,4	58,8	53,9	55,1	51,9	+10,1	14,782		212. 41. 55,57	30,098	43,8	40,4	39,33	71. 7. 8,81	T.		
	(a) * R. 7 <sup>h</sup> . 0 <sup>m</sup> . 24 <sup>s</sup> ..	3. 20,4	21,2	27,0	20,6	20,7	18,8				212. 16. 42,83								
	H. C. 13818.....	...	...	...	...	...	...				212. 18. 22,58								
	H. C. 14242.....	4. 5,2	5,0	12,1	4,7	4,2	2,9				205. 9. 7,07								
	H. C. 14383.....	2. 23,7	24,6	29,3	23,1	24,1	21,9				212. 17. 25,27								
	Castor R.....	3. 15,0	14,6	21,4	14,8	13,1	13,9				339. 22. 30,91								
	Castor .....	3. 20,3	21,5	27,5	20,8	20,0	20,0				199. 22. 37,17								
	(b) Pollux R.....	4. 53,9	56,1	56,1	55,1	53,3	54,7				335. 32. 49,93								
(b) Pollux .....	4. 23,8	26,0	25,9	22,3	24,1	22,8	203. 12. 19,05												
Mar.12	H. C. 16110.....	3. 26,0	25,1	31,8	25,6	24,9	23,0	+9,5	9,887		215. 3. 27,15	29,944	43,6	40,5	42,73	73. 28. 43,79	T.		
	o Ursæ Majoris R	1. 56,0	57,0	61,9	57,0	56,0	54,1				8. 21. 59,99								
	o Ursæ Majoris..	3. 5,0	4,4	12,9	5,9	5,1	2,5				170. 23. 9,31								
	(c) θ Cancri .....	4. 28,0	28,0	34,0	26,6	28,4	24,7				212. 59. 29,70								
	(d) ε Cancri .....	1. 6,7	7,9	11,0	5,2	7,2	3,8				211. 31. 7,32								
	B. (w.) xi. 951..	1. 30,4	31,0	35,1	30,6	30,0	29,8				226. 36. 31,63								
											29,898								
											40,5								
Mar.14	Zenith Point ....	2. 24,9	25,0	30,5	25,3	22,7	23,5	9,616			179. 22. 34,09	29,584	37,5	35,5	54,59	80. 23. 36,32	T.		
	B. (w.) x. 718...	3. 6,5	5,1	11,8	6,4	4,1	7,1				221. 58. 7,82								
	B. (w.) x. 847....	0. 25,1	26,2	29,8	25,2	22,9	25,9				227. 5. 25,98								
	β Ursæ Majoris R	0. 53,5	56,0	60,1	56,7	54,2	55,0				4. 19. 52,04								
	β Ursæ Majoris..	1. 20,2	19,0	25,9	20,5	18,9	18,9				174. 25. 19,43								
	θ Leonis R.....	0. 32,6	32,2	36,9	32,9	30,2	30,9				323. 24. 18,33								
	θ Leonis.....	2. 3,2	2,9	8,2	4,0	0,9	3,2				215. 20. 49,93								
	δ Ursæ Majoris R	0. 54,9	56,0	60,0	55,9	54,6	54,1				5. 0. 30,98								
	(b) δ Ursæ Majoris..	4. 61,7	61,0	66,7	60,7	59,2	58,7				173. 44. 36,09								
	Mar.15	(e) ⊙ S.L.....	3. 46,0	50,0	49,3	47,9	45,5				45,0								
H. C. 14038.....		1. 46,0	47,2	51,8	45,9	48,1	44,1	209. 21. 47,75											
H. C. 14242.....		4. 5,0	5,0	12,0	4,1	4,4	1,0	205. 9. 6,55											
H. C. 14407.....		3. 44,4	44,0	50,1	41,6	44,0	40,0	213. 8. 45,20											
Castor R.....		3. 4,3	3,2	9,8	5,0	2,3	3,3	339. 22. 30,13											
Castor .....		3. 10,9	10,0	18,0	10,6	10,1	8,0	199. 22. 37,15											
B.A.C. 2506.....		3. 43,9	42,1	49,5	41,7	43,5	38,8	206. 53. 44,43											
Pollux R.....		3. 38,4	36,2	43,3	37,2	35,2	35,9	335. 32. 49,96											
Pollux.....		3. 6,7	5,0	10,9	4,5	4,4	1,8	203. 12. 17,64											
H. C. 15183.....		1. 54,6	55,2	58,7	53,9	54,7	51,0	206. 56. 55,28											
(b) H. C. 15330.....		4. 35,4	37,0	39,4	35,7	34,8	35,9	215. 49. 36,25											
(b) B. (w.) viii. 1344		4. 53,7	53,1	56,1	51,6	52,7	52,4	217. 9. 53,23											
(f) B. (w.) viii. 1443		3. 41,4	41,6	47,1	40,7	40,6	39,5	220. 8. 42,98											
Mar.17	β Leonis R.....	1. 53,9	52,7	58,0	52,9	50,9	51,1	18,189			322. 34. 3,03	29,874	31,0	26,5	45,75	74. 36. 24,81	T.		
	β Leonis.....	3. 57,8	55,0	63,2	57,0	54,4	55,0				216. 11. 7,50								
Mar.18	(b) H. C. 17905.....	4. 61,6	62,3	66,8	60,9	61,3	59,0	14,059			211. 33. 37,31	30,088	30,5	26,6	38,75	69. 58. 49,97	T.		
	(b) B. (w.) xi. 844..	4. 34,5	36,1	37,0	34,2	32,3	34,7				225. 24. 37,40								
	10 Virginis.....	0. 54,7	54,9	58,2	53,2	53,0	55,5				228. 50. 55,20								
	(g) B. (w.) xii. 93...	0. 34,9	36,5	40,0	36,0	32,1	36,1				232. 20. 36,12								
	B. (w.) xii. 178..	4. 7,2	3,5	13,6	4,1	3,1	4,5				334. 4. 7,30								
	B. (w.) xii. 269..	2. 24,6	23,7	30,1	22,9	21,3	24,4				229. 22. 25,27								
	B. (w.) xii. 356..	1. 18,0	16,9	23,0	16,1	14,9	18,8				229. 36. 18,37								
Mar.19	⊙ S.L.....	3. 12,3	11,0	17,1	13,0	8,9	11,9	+10,4	10,050		232. 18. 12,44	30,094	35,9	34,3	80,07	90. 44. 6,10	T.		
	⊙ N.L.....	1. 5,9	6,3	9,1	6,0	4,6	6,4				231. 46. 5,73								
Mar.22	(h) ⊙ N.L.....	1. 17,3	19,0	21,4	16,1	15,6	17,8		13,346		230. 35. 8,53	29,843	36,2	36,8	74,27	89. 0. 56,39	B.		
	⊙ S.L.....	3. 21,5	24,4	25,0	20,6	19,5	21,0				231. 7. 13,38								
	Zenith Point....	2. 19,7	20,2	26,9	20,1	18,1	19,2				179. 22. 34,41								
	(i) B. (w.) ix. 534...	3. 2,5	2,5	6,9	0,0	1,1	1,4				219. 33. 3,45								



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"			
		"	"	"	"	"	"						"	"		"	"	"	
Mar.22	ψ Leonis.....	3. 9,8	10,0	15,0	8,1	7,6	8,1	+10,4			216. 53. 10,87	29,848	35,5	31,2	46,42	75. 18. 30,88	B.		
	21 Leonis.....	2. 61,8	62,4	66,4	59,4	60,6	61,4			219. 3. 3,05				50,16	77. 28. 26,80	B.			
	B.A.C. 3398.....	1. 52,9	54,0	57,6	51,8	52,9	53,3			221. 56. 54,40				55,54	80. 22. 23,53	B.			
	(a) Regulus R.....	2. 21,3	21,5	26,3	19,3	18,6	20,5		12,365	-1	319. 51. 32,70				49,88	77. 18. 59,59	B.		
	Regulus.....	4. 24,6	24,2	29,6	21,8	23,6	23,6		12,365	+1	218. 53. 36,81					77. 19. 0,28	B.		
Mar.23	H. C. 15159.....	0. 28,6	32,4	34,0	29,4	30,5	28,4				210. 25. 30,73	29,820	34,8	31,3	36,38	68. 50. 40,70	B.		
	(b) * R. 7 <sup>h</sup> . 45 <sup>m</sup> . 34 <sup>s</sup> .....	1. 10,1	12,7	6,4	10,9	11,9	9,5				211. 1. 10,65				37,24	69. 26. 21,48	B.		
	H. C. 16130.....	1. 19,8	22,1	25,1	19,9	22,1	19,0				212. 26. 21,80				39,33	70. 51. 34,72	B.		
	H. C. 16565.....	3. 11,0	13,6	17,8	11,3	13,9	8,4				209. 38. 13,78				35,26	68. 3. 22,63	B.		
	B. (w.) ix. 821 ..	1. 8,3	10,2	12,2	7,6	7,3	9,9				222. 1. 9,65	29,816	34,3	29,7	55,80	80. 26. 39,04	B.		
	(c) B. (w.) ix. 1035.....	2. 9,8	10,6	13,3	7,9	8,3	9,3			+2	223. 12. 10,71				58,15	81. 37. 42,45	B.		
	Regulus R.....	2. 34,8	36,0	38,9	32,4	32,2	33,9		12,979	-1	319. 51. 33,42				49,98	77. 18. 58,97	B.		
	(d) Regulus.....	4. 36,4	37,0	42,5	33,8	35,3	35,0		12,979	+2½	218. 53. 36,36					77. 18. 59,93	B.		
	Mar.24	(e) * R. 7 <sup>h</sup> . 29 <sup>m</sup> . 34 <sup>s</sup> .....	2. 26,0	28,2	33,3	26,6	26,7	24,9		10,382		209. 47. 20,51	29,764	34,2	29,4	35,55	68. 12. 29,65	B.	
		H. C. 15159.....	0. 27,0	30,4	32,6	26,1	27,6	26,2				210. 25. 28,48				36,46	68. 50. 38,53	B.	
H. C. 15323.....		1. 34,0	35,0	39,3	32,1	34,3	34,6				211. 1. 35,43				37,33	69. 26. 46,35	B.		
* R. 7 <sup>h</sup> . 45 <sup>m</sup> . 34 <sup>s</sup> .....		...	...	...	...	...	...		11,019		211. 1. 14,17				37,32	69. 26. 25,08	B.		
H. C. 16130.....		1. 21,9	22,4	26,3	21,0	20,9	22,2				212. 26. 22,93				39,42	70. 51. 35,94	B.		
(f) * R. 9 <sup>h</sup> . 16 <sup>m</sup> . 54 <sup>s</sup> .....		2. 49,8	50,3	54,4	47,2	50,2	47,6				219. 37. 50,93	29,794	33,7	28,4	51,41	78. 3. 15,93	B.		
h Leonis.....		2. 50,2	49,9	55,2	48,5	50,0	48,9			+2	221. 12. 51,54				54,36	79. 38. 19,49	B.		
H. C. 18903.....		2. 12,7	12,2	16,7	10,3	12,6	12,9				219. 2. 13,67				50,34	77. 27. 37,60	B.		
B. (w.) ix. 749...		2. 50,5	49,4	55,1	46,1	49,3	47,9				217. 22. 50,70				47,45	75. 48. 11,74	B.		
B. (w.) ix. 821 ..		1. 8,0	8,3	12,1	5,9	6,6	8,2				222. 1. 8,58				55,91	80. 26. 38,08	B.		
B. (w.) ix. 902 ..		0. 34,4	35,3	38,3	31,9	34,2	35,5				222. 35. 35,13				57,04	81. 1. 5,76	B.		
B. (w.) ix. 1011..		2. 50,5	50,4	56,3	47,4	51,3	48,1				223. 47. 51,65				59,49	82. 13. 24,73	B.		
B. (w.) ix. 1035..		2. 8,8	7,9	12,7	5,5	7,7	8,8			+1½	223. 12. 9,37				58,27	81. 37. 41,23	B.		
Regulus R.....		2. 20,0	22,6	25,1	18,1	18,5	19,2		12,328	-1	319. 51. 32,80				50,09	77. 18. 59,70	B.		
Regulus.....		4. 23,3	22,4	28,4	20,4	21,6	22,8		12,328	+1	218. 53. 36,16					77. 18. 59,84	B.		
B. (w.) x. 110 ...		0. 45,8	45,9	48,2	43,2	46,1	45,1				225. 5. 45,98				62,24	83. 31. 21,81	B.		
(g) H. C. 20020.....		0. 6,5	7,5	10,5	5,2	6,4	7,9				221. 50. 7,37				55,55	80. 15. 36,51	B.		
B. (w.) x. 299 ...		4. 7,2	5,3	11,7	3,4	5,7	4,1				225. 39. 7,65				63,46	84. 4. 44,70	B.		
Mar.26		(h) * R. 7 <sup>h</sup> . 29 <sup>m</sup> . 34 <sup>s</sup> .....	1. 52,5	55,7	59,5	53,9	54,7	50,6	+11,0	8,721	+2	209. 47. 22,10	29,960	35,5	30,8	35,68	68. 12. 31,11	B.	
	H. C. 15159.....	0. 30,7	33,4	35,1	31,4	31,1	31,1			+1½	210. 25. 32,45				36,59	68. 50. 42,37	B.		
	H. C. 15323.....	1. 35,3	36,5	40,2	34,9	35,4	35,3				211. 1. 36,85				37,46	69. 26. 47,64	B.		
	(i) * R. 7 <sup>h</sup> . 45 <sup>m</sup> . 34 <sup>s</sup> .....	...	...	...	...	...	...		11,073		211. 1. 14,47				37,45	69. 26. 25,05	B.		
	H. C. 16130.....	1. 22,7	24,0	26,4	22,4	22,8	22,8				212. 26. 24,03				39,56	70. 51. 36,92	B.		
Mar.29	(k) S.L.....	2. 23,9	29,0	29,0	23,4	24,2	24,9		9,161	2	228. 22. 44,70	30,098	37,8	44,6	68,16	86. 48. 26,19	B.		
	N.L.....	0. 19,6	26,0	22,1	20,9	19,1	21,2		9,161	+2	227. 50. 39,70				66,89	86. 16. 19,92	B.		
	Zenith Point....	2. 24,7	26,1	30,6	24,0	24,4	23,9		9,619		179. 22. 34,45						B.		
	Zenith Point....	2. 11,3	13,6	17,4	11,8	11,7	10,6		8,976		179. 22. 34,89						B.		
	H. C. 15159.....	0. 28,3	32,9	33,2	28,4	30,9	28,0				210. 25. 30,47	30,009	29,5	36,7	36,19	68. 50. 39,99	B.		
	(l) * R. 7 <sup>h</sup> . 45 <sup>m</sup> . 34 <sup>s</sup> .....	1. 13,0	16,8	18,4	12,2	15,6	11,7				211. 1. 15,08				37,05	69. 26. 25,46	B.		
	H. C. 16130.....	1. 21,6	24,3	26,3	20,9	22,3	21,7				212. 26. 23,37				39,13	70. 51. 35,83	B.		
	(m) * R. 9 <sup>h</sup> . 16 <sup>m</sup> . 54 <sup>s</sup> .....	2. 57,2	59,0	61,3	55,6	57,6	55,8				219. 37. 58,85	30,000	38,4	33,5	51,21	78. 3. 23,39	B.		
	(n) h Leonis.....	2. 51,9	53,2	56,9	50,6	53,6	51,0				221. 12. 53,92				54,14	79. 38. 21,39	B.		
	B. (w.) ix. 749...	2. 48,5	49,4	53,6	46,0	48,8	45,5				217. 22. 49,67				47,27	75. 48. 10,27	B.		
	B. (w.) ix. 821 ..	1. 8,7	10,3	12,4	8,4	8,9	9,5				222. 1. 10,12				55,69	80. 26. 39,14	B.		
	B. (w.) ix. 902 ..	0. 34,6	36,9	37,3	33,2	34,4	35,6				222. 35. 35,55				56,82	81. 1. 5,70	B.		
	(o) B. (w.) ix. 1011..	2. 48,9	50,6	53,9	46,9	50,0	47,0				223. 47. 50,60				59,25	82. 13. 23,18	B.		
	19 Sextantis.....	3. 61,3	62,3	66,6	59,1	62,4	61,6				226. 14. 3,70	29,997	38,4	32,9	64,58	84. 39. 41,61	B.		
	B. (w.) x. 173 ...	0. 21,8	24,9	24,4	20,6	21,6	22,8				220. 0. 22,82				51,95	78. 25. 48,10	B.		
	(p) * R. 10 <sup>h</sup> . 14 <sup>m</sup> . 29 <sup>s</sup> .....	0. 15,3	17,5	18,9	15,2	16,1	17,5				221. 45. 16,87				55,24	80. 10. 45,44	B.		
	B. (w.) x. 553....	2. 44,8	45,7	49,5	44,3	45,2	43,3				216. 47. 46,48				46,34	75. 13. 6,15	B.		
	(q) * R. 10 <sup>h</sup> . 36 <sup>m</sup> . 59 <sup>s</sup> .....	0. 8,4	11,3	11,7	7,6	9,3	9,4				226. 30. 9,67				65,19	84. 55. 48,19	B.		

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) 'Beautifully steady.' (b) Very faint from cloud. (c) Hid by thick cumulus just before. (d) Much obscured by cloud. (e) 'Good.'  
 (f) Very faint. (g) 'Low in the field.' (h) Very faint: thick mist over the sky. (i) Faint. (k) Extremely unsteady. (l) 'The star following H. C. 15323.'  
 (m) Difficult to bisect, being very faint. (n) Great motion. (o) 'A brighter north-following, and a faint one preceding.'  
 (p) Observed for H. C. 20106. The R.A. is uncertain: see the Catalogue of N.P.D. (q) The R.A. is that of B. (w.) x. 659, for which this star was taken: see the N.P.D. Catalogue.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.			
		A	B	C	D	E	F						Int.	Ext.		"	"	"		"	"	"
		"	"	"	"	"	"						"	"								
Mar.30	(a) ☉ N.L.....	3.25,4	29,0	30,5	25,9	26,2	25,0	+11,0	12,936		227.27.27,03	29,781	39,9	47,7	64,88	85.53.5,24	B.					
	☉ S.L.....	0.26,9	31,0	29,7	28,0	27,6	27,0		12,936		227.59.27,31				66,11	86.25.6,75	B.					
	(b) 54 Cancri.....	1.9,2	11,9	12,4	8,5	9,3	8,4				215.41.10,37	29,705	40,8	37,7	43,63	74.6.27,33	B.					
	(c) * R. 9 <sup>h</sup> . 16 <sup>m</sup> . 54 <sup>s</sup>	2.53,6	55,2	57,9	54,6	53,8	52,1			+2	219.37.55,73				50,27	78.3.19,33	B.					
	(d) h Leonis.....	2.52,6	55,1	57,3	52,8	53,6	50,6				221.12.54,73			35,8	53,36	79.38.21,42	B.					
	B. (w.) ix. 902..	0.34,0	37,3	36,8	34,6	34,9	35,4				222.35.35,72				55,99	81.1.5,04	B.					
	(e) B. (w.) ix. 1011..	2.49,8	52,9	54,6	48,4	52,0	48,7				223.47.52,12				58,39	82.13.23,84	B.					
	B. (w.) ix. 1035..	2.8,8	11,1	12,6	8,9	9,9	9,4			+2	223.12.10,99				57,19	81.37.41,51	B.					
	H. C. 19857.....	0.24,6	27,4	26,8	23,7	24,7	26,8				223.10.25,82	29,698	39,3	35,7	57,13	81.35.56,28	B.					
	B. (w.) x. 110...	0.49,4	52,4	52,3	49,1	51,4	49,1			+2	225.5.51,00				61,10	83.51.25,43	B.					
	(f) H. C. 20020.....	0.9,5	13,0	13,2	10,3	11,6	11,3				221.50.11,55				54,53	80.15.39,41	B.					
	B. (w.) x. 261...	0.50,5	54,2	53,6	49,7	52,5	51,6				227.10.52,33				65,70	85.36.31,36	B.					
	(g) B. (w.) x. 317...	4.56,9	59,6	59,7	57,4	57,5	56,8				216.34.57,97				45,25	75.0.16,55	B.					
	i Leonis.....	1.17,4	19,0	20,2	15,8	17,2	16,4				216.41.18,15				45,43	75.6.36,91	B.					
	(h) B. (w.) x. 496...	2.19,1	21,3	23,4	18,6	19,6	19,0				219.32.21,03				50,30	77.57.44,66	B.					
	B. (w.) x. 580...	4.14,9	16,2	21,3	15,1	15,0	13,7				220.59.17,60				52,93	79.24.43,86	B.					
	(i) * R. 10 <sup>h</sup> . 36 <sup>m</sup> . 59 <sup>s</sup>	0.9,3	12,8	12,2	9,7	10,4	9,6				226.30.10,73				64,16	84.55.48,22	B.					
	B. (w.) x. 718...	3.4,9	6,3	9,9	5,0	6,6	5,2				221.58.7,45	29,684	39,3	34,3	54,92	80.23.35,70	B.					
	β Ursæ Majoris R.	1.28,6	31,9	34,3	31,1	30,0	30,9		14,647	-2	4.19.53,82				5,18	32.49.43,29	B.					
	β Ursæ Majoris..	1.51,0	53,4	56,6	51,9	53,6	50,5		14,647		174.25.16,60					32.49.44,75	B.					
	β Leonis R.....	0.55,0	57,6	57,9	56,8	55,2	55,7		15,527		322.34.1,41	29,680	38,3	33,8	44,76	74.36.25,64	B.					
	β Leonis.....	3.2,0	2,0	6,4	0,4	2,1	0,4		15,527	+2½	216.11.8,29					74.36.26,38	B.					
Mar.31	☉ S.L.....	1.16,4	23,8	20,2	20,1	17,4	18,2		10,157		227.36.16,55	29,684	43,5	51,9	64,45	86.1.54,33	B.					
	☉ N.L.....	4.12,5	18,0	19,0	15,2	13,0	12,6		10,157		227.4.13,34				63,26	85.29.49,93	B.					
Apr. 1	☉ S.L.....	4.3,9	6,6	7,8	4,4	4,5	2,3		12,811	+1	227.13.8,06	29,302	48,2	53,8	62,53	85.38.43,92	B.					
	☉ N.L.....	2.3,5	9,8	6,6	5,4	4,2	2,4		12,811	+1	226.41.7,72				61,37	85.6.42,42	B.					
	54 Cancri.....	1.10,8	12,4	13,5	10,3	10,9	11,6				215.41.12,02	29,396	46,8	45,4	42,49	74.6.27,84	B.					
	(g) H. C. 17662.....	4.59,3	61,8	60,3	60,1	58,6	60,1		12,378		244.54.10,43				126,41	103.20.50,17	B.					
	(k) * R. 8 <sup>h</sup> . 49 <sup>m</sup> . 41 <sup>s</sup>	2.26,9	26,6	29,1	26,5	25,9	25,6		9,213		244.42.44,07				125,32	103.9.22,72	B.					
	(l) * R. 8 <sup>h</sup> . 49 <sup>m</sup> . 55 <sup>s</sup>	...	...	...	...	...	...		12,378		244.41.38,05				125,21	103.8.16,59	B.					
	B. (w.) ix. 1117..	1.49,6	50,9	52,5	49,1	50,5	48,5				216.36.50,85	29,406	45,8	44,0	44,09	75.2.8,27	B.					
	B. (w) ix. 1287..	3.61,1	59,9	64,0	58,2	61,2	58,5				224.34.1,95				58,37	82.59.33,65	B.					
	B. (w.) x. 38.....	1.9,5	10,7	11,1	7,8	11,6	9,6				224.41.10,47				58,61	83.6.42,41	B.					
	(m) * R. 10 <sup>h</sup> . 14 <sup>m</sup> . 29 <sup>s</sup>	0.18,3	20,4	19,9	18,7	17,8	18,1				221.45.18,98				52,92	80.10.45,23	B.					
	(g) B. (w.) x. 299...	4.15,5	17,0	14,5	13,3	14,4	14,2				225.39.14,53				60,62	84.4.48,48	B.					
	H. C. 20326.....	1.41,3	42,4	42,0	37,8	40,4	40,6				223.1.41,37			43,7	55,36	81.27.10,06	B.					
	i Leonis.....	1.19,1	19,6	21,6	18,2	18,3	18,0				216.41.19,62				44,24	75.6.37,19	B.					
	H. C. 20516.....	2.31,6	31,6	33,8	30,3	30,3	30,3				219.47.32,23				49,42	78.12.54,98	B.					
	B. (w.) x. 580...	4.20,6	18,7	25,1	19,0	18,8	17,2				220.59.21,48				51,55	79.24.46,36	B.					
	(n) B. (w.) x. 640...	3.25,7	24,6	28,2	23,8	25,3	25,4		9,841		226.3.30,07			43,3	61,57	84.29.49,7	B.					
	35 Sextantis.....	...	...	...	...	...	...				226.3.26,75				61,57	84.29.1,65	B.					
	B. (w.) x. 795...	2.7,0	7,3	9,4	5,2	7,2	6,4				228.47.7,85				67,74	87.12.48,92	B.					
Apr. 5	Zenith Point....	2.7,5	8,3	10,2	6,5	8,1	3,9	+7,6	8,728		179.22.34,48						B.					
	Zenith Point....	2.18,8	19,5	22,3	17,7	18,7	15,2		9,269		179.22.34,55						B.					
Apr.12	(g) ☉ N.L.....	4.39,7	40,6	38,9	38,2	38,7	38,1	+11,5	14,113		222.33.13,11	29,934	48,2	50,4	54,66	80.58.40,44	B.					
	☉ S.L.....	1.33,5	34,0	34,6	32,8	33,5	31,1		14,113	+1½	223.5.8,49				55,69	81.30.36,85	B.					
	(g)(o) B. (w.) xi. 368..	4.55,3	56,5	56,2	53,2	53,4	53,2				227.54.54,60	29,868	43,8	37,2	67,58	86.20.34,85	B.					
	(g) B. (w.) xi. 482..	4.23,6	24,0	23,0	20,2	20,9	21,2			+1	224.14.21,92				59,45	82.39.54,04	B.					
	(p) B. (w.) xi. 593..	0.3,9	5,4	4,9	2,0	1,3	1,8				227.45.3,23				67,20	86.10.43,10	B.					
	(q) B. (w.) xi. 689..	2.63,0	61,4	65,8	60,8	60,5	59,2				232.23.2,95				79,22	90.48.54,84	B.					
	B. (w.) xi. 787..	3.35,3	33,4	37,8	31,1	33,6	31,5				226.3.35,15				63,34	84.29.11,16	B.					
Apr.13	(r) ☉ S.L.....	3.35,4	34,0	36,8	33,9	33,3	32,3		10,636		222.43.22,38	29,929	44,2	43,7	55,74	81.8.50,79	B.					
	☉ N.L.....	1.40,0	41,0	40,4	39,6	37,2	37,5		10,636	+1½	222.11.27,09				54,72	80.36.54,48	B.					
	B. (w.) x. 38....	1.20,3	19,1	21,0	18,7	18,8	17,1		10,636	+3	224.41.6,57	30,024	43,2	35,5	60,91	83.6.40,15	B.					

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Unsteady. (b) Blazing. Stars very badly defined and unsteady this evening. (c) Faint. (d) Great motion. (e) 'The south-preceding of two.' (f) 'Low in the field. See March 24. (g) Negative correction for Runs. (h) Very faint. 'One north-preceding.' (i) 'The north-preceding of two.' See March 29. (k) 'The preceding and fainter.' The R.A. is uncertain: see the N.P.D. Catalogue. (l) 'The following and brighter.' (m) See March 29. (n) 'The south-preceding star.' (o) Very faint. (p) Faint and ill-defined. 'One preceding.' (q) 'A fainter north-preceding.' (r) Cloudy at this time, and till the next observation.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
Apr.13	B. (w.) x. 112...	3.20,9	19,7	23,4	19,4	18,6	17,6	+11,5	10,636		221.38.7,95	30,024	43,2	35,5	54,76	80.3.35,38			B.
	B. (w.) xi. 369...	3.33,0	31,0	36,3	29,8	28,3	30,2				229.33.32,80	30,020	41,5	34,6	72,37	87.59.17,84			B.
	B. (w.) xi. 482...	4.22,1	19,0	24,5	18,6	17,7	17,5				224.14.21,57				60,07	82.39.54,31			B.
	B. (w.) xi. 548...	1.56,1	54,5	56,5	53,5	54,9	53,1				224.41.55,50				61,04	83.7.29,21			B.
	B. (w.) xi. 593...	0.49,9	5,5	5,9	3,1	0,9	2,8				227.45.3,87				67,91	86.10.44,45			B.
	B. (w.) xi. 689...	2.62,8	61,7	65,7	62,2	59,4	59,3				232.23.3,00				80,06	90.48.55,73			B.
Apr.14	(a) Zenith Point....	2.44,7	44,0	49,3	43,7	43,7	41,0		10,471		179.22.35,63								B.
	Zenith Point....	2.48,4	4,4	8,6	4,2	1,7	1,5		8,560		179.22.35,04								B.
Apr.18	(b) ☉ S.L.....	1.24,6	25,6	27,8	24,1	23,5	20,9	+10,2	8,909		220.56.47,66	30,040	51,2	56,7	51,20	79.22.11,53			B.
	(c) ☉ N.L.....	4.33,2	35,0	31,9	32,4	30,7	31,0		8,909		220.24.54,96				50,25	78.50.17,88			B.
Apr.20	(c)(d) ☉ N.L.....	4.14,6	15,3	14,1	14,2	11,0	12,0		11,776	-3/4	219.43.36,05	29,729	47,9	48,4	49,37	78.8.58,09			B.
Apr.21	Zenith Point....	2.38,1	39,2	42,5	39,4	35,5	35,3		10,182		179.22.35,33								B.
Apr.26	(c) B. (w.) xi. 210...	4.38,0	38,3	39,0	36,5	36,4	36,6	+9,7			230.29.37,33	29,730	42,8	37,4	73,66	88.55.23,61			B.
	(c)(e) B. (w.) xi. 482...	4.22,5	22,0	21,0	19,4	18,2	19,1			+3	224.14.20,31				59,15	82.39.52,08			B.
	(c) B. (w.) xi. 568...	4.27,0	27,1	26,9	23,3	23,3	25,8				234.4.25,37				83,83	92.30.21,82			B.
	B. (w.) xi. 689...	3.30,1	1,4	6,4	1,8	0,0	0,6				232.23.3,18				78,82	90.48.54,62			B.
	B. (w.) xi. 787...	3.32,8	30,2	35,3	28,8	30,1	29,7				226.3.32,28				63,02	84.29.7,92			B.
	(f) B. (w.) xi. 844...	4.39,0	36,1	42,6	34,8	35,6	34,4				225.24.38,57				61,61	83.50.12,80			B.
	(g) B. (w.) xi. 159...	2.32,4	30,7	34,6	28,4	27,7	30,0				229.17.31,45	29,731	41,4	36,5	70,72	87.43.14,79			B.
	(h) B.A.C. 4201.....	0.36,1	34,6	37,5	32,8	33,0	35,2				239.25.35,07				103,11	97.51.50,80			B.
	B. (w.) xi. 420...	2.69,4	4,9	8,4	1,3	2,8	4,2				231.2.5,43				75,23	89.27.53,28			B.
	(i) Polaris R.....	1.21,3	21,2	22,4	18,6	16,5	17,4		12,547		35.40.26,46	29,816	42,8	47,3	42,91	1.28.34,01			B.
	Polaris .....	0.37,4	39,0	40,3	35,9	35,6	35,9		12,547		143.4.46,80					1.28.36,51			B.
	Polaris R.....	1.25,3	25,3	26,1	22,4	20,2	21,6		11,203		35.40.27,34				42,92	1.28.33,12			B.
	Polaris .....	4.36,6	38,7	38,2	36,2	34,4	36,2		11,203		143.4.47,53					1.28.37,23			B.
Apr.27	(e) ☉ S.L.....	0.35,4	34,4	34,8	33,1	30,3	32,4		6,274	+3	217.56.52,31	29,820	44,3	49,1	46,42	76.22.11,35			B.
	B. (w.) x. 847...	0.26,9	27,6	27,3	24,9	23,6	24,9				227.5.26,00	29,826	45,2	43,6	64,70	85.31.3,32			B.
	(l) 28 Virginis.....	0.24,6	25,1	24,4	22,1	21,5	23,7				238.15.23,70	29,821	43,5	38,9	98,24	96.41.34,56			B.
	B.A.C. 4294.....	3.46,3	45,5	48,8	43,7	44,3	44,0				237.3.46,65				93,79	95.29.53,06			B.
	(m) B. (w.) xi. 845...	3.49,4	46,1	51,3	45,9	51,4	46,0				241.38.49,58				112,71	100.5.14,91			B.
	B. (w.) xi. 935...	2.43,0	40,4	43,9	39,4	40,4	39,5				242.52.41,97				118,78	101.19.13,37			B.
	(n) H. C. 24344.....	2.14,6	12,3	15,6	10,6	9,7	12,3				235.7.13,23				87,14	93.33.12,99			B.
	(o) Polaris SP. R....	0.31,2	31,5	31,3	28,6	28,2	30,4		18,581		38.37.32,13	29,824	42,9	38,3	48,64	-1.28.37,39			B.
	(o) Polaris SP.....	0.42,2	43,0	43,5	38,9	39,9	38,4		18,581		140.7.40,86					-1.28.35,16			B.
	(o)(c) Polaris SP. R....	4.50,9	52,0	51,0	47,9	49,6	48,9		17,083		38.37.33,61					-1.28.38,87			B.
	(o) Polaris SP.....	0.23,9	24,3	25,0	20,9	21,1	20,6		17,083		140.7.41,34					-1.28.34,68			B.
	(p) v Bootis R.....	3.25,7	23,2	28,4	23,0	21,6	21,1		13,763		323.42.6,44				42,74	73.28.19,68			B.
	(q) v Bootis.....	4.21,9	19,9	25,1	19,3	17,5	17,9		13,763	+2	215.3.3,36					73.28.18,72			B.
Apr.28	☉ S.L.....	1.38,8	6,8	5,4	3,4	1,0	0,7		4,623		217.37.56,01	29,800	45,6	54,0	45,41	76.3.14,04			B.
	☉ N.L.....	4.15,9	16,7	18,9	15,1	13,1	7,7		4,623		217.6.8,09				44,55	75.31.25,26			B.
	Zenith Point....	2.46,1	44,6	48,9	43,8	43,4	43,0		10,502		179.22.35,38								B.
Apr.30	χ Leonis R.....	4.33,6	31,9	36,0	31,4	29,3	26,6		13,313		315.18.23,81	29,768	49,4	47,8	56,38	81.52.15,95			B.
	χ Leonis .....	2.56,0	55,1	58,2	53,0	55,0	48,2		13,313	+2	223.26.46,16					81.52.15,16			B.
	(r) B. (w.) xi. 78...	0.19,0	22,4	20,0	18,6	17,4	15,2				228.0.18,87				66,10	86.25.57,59			B.
	(r)(s) B. (w.) xi. 186...	3.58,4	57,9	61,4	55,8	57,0	54,4				229.3.58,77				68,61	87.29.40,00			B.
	79 Leonis .....	1.31,0	32,0	32,6	29,3	29,8	27,9				229.21.30,92				69,32	87.47.12,86			B.
	H. C. 21911.....	0.89,9	10,3	8,9	6,5	7,6	6,4				231.10.8,15				73,93	89.35.54,70			B.
	(c) B. (w.) xi. 482...	4.22,5	24,0	21,5	20,3	22,3	20,8				224.14.21,68				57,96	82.39.52,26			B.
	B. (w.) xi. 548...	1.55,8	55,5	56,7	52,9	55,8	51,6				224.41.55,33				58,89	83.7.26,84			B.
	B. (w.) xi. 654...	4.13,8	12,6	16,6	10,5	11,3	10,0				228.24.13,83				67,03	86.49.53,48			B.
	(t) * R. 11 <sup>b</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	0.17,4	19,4	18,0	16,4	16,1	15,2				230.40.17,18	29,768	48,8	47,5	72,67	89.6.2,47			B.
	(t) * R. 11 <sup>b</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	...	...	...	...	...	...		13,639		230.39.1,27				72,62	89.4.46,51			B.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Great change of Zenith Point. Classes of students came into the Circle Room about this time. (b) Clouded and in great motion. (c) Negative correction for Runs. (d) S.L. hid by cloud. (e) Unsteady. (f) 'A fainter north-preciding and another north-following.' (g) Very faint and indistinct. (h) Dancing. (i) Cloudy. Times by Molyneux, 1<sup>h</sup>. 0<sup>m</sup>. 32<sup>s</sup> and 1<sup>h</sup>. 10<sup>m</sup>. 17<sup>s</sup>. Molyneux fast on Hardy, 8". (k) Great motion. Times by Molyneux, 1<sup>h</sup>. 28<sup>m</sup>. 24<sup>s</sup> and 1<sup>h</sup>. 29<sup>m</sup>. 32<sup>s</sup>. The corrections are -31",50 and +34",42, which were obtained by special calculation. (l) Faint, the sky being thick. B. (w.) xi. 753 was too faint for bisection. (m) Bisection with difficulty. (n) Extremely faint: the observation doubtful. The recorded Circle reading has been increased 5". (o) Blazing and unsteady. Times by Molyneux, 13<sup>h</sup>. 7<sup>m</sup>. 17<sup>s</sup>, 8<sup>m</sup>. 38<sup>s</sup>, 18<sup>m</sup>. 26<sup>s</sup>, and 19<sup>m</sup>. 53<sup>s</sup>. Molyneux slow, 1<sup>m</sup>. 37<sup>s</sup>. (p) Water dropping on the mercury. (q) Cloudy. (r) Very faint from day-light. (s) 'A brighter south-preciding,' viz. B.A.C. 3357. (t) The two stars had the same R.A., which is supposed to be that of H. C. 22631, the star intended to be taken. For the correct R.A. see the Catalogue of N.P.D.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.	
		A	B	C	D	E	F						Int.	Ext.				
		"	"	"	"	"	"						"	"				"
Apr.30	B. (w.) XII. 45...	1.53,2	53,0	55,1	49,4	52,5	49,7	+9,7			233.26.52,75	29,768	48,8	47,5	80,33	91.52.45,70	B.	
	H. C. 22986....	0.51,6	52,4	53,4	49,0	51,3	48,7				233.45.51,33				81,26	92.11.45,21	B.	
	B. (w.) XII. 178..	4.13,5	12,2	16,4	9,9	11,3	9,8				234.4.11,87				82,18	92.30.6,67	B.	
	H. C. 23179....	0.15,0	16,0	15,3	13,4	13,9	13,3				236.20.14,55				89,45	94.46.16,62	B.	
	B.A.C. 4201....	0.37,6	38,5	38,2	34,6	36,2	35,4				239.25.36,95				100,90	97.51.50,47	B.	
May 2	(a) ☉ S.L.....	4.46,1	49,9	45,7	46,3	46,6	45,3	+8,7	10,544		216.24.35,23	29,853	50,4	60,3	42,98	74.49.50,96	B.	
	☉ N.L.....	2.62,5	64,3	64,4	63,3	61,6	58,5		10,544		215.52.51,95				42,16	74.18.6,86	B.	
May 4	B. (w.) XI. 548..	1.54,6	53,9	53,6	51,9	52,1	50,9				224.41.53,37	30,167	51,4	47,0	59,78	83.7.25,90	B.	
	H. C. 22330....	1.25,2	25,5	25,3	23,4	21,4	22,7				228.31.24,32				68,33	86.57.5,40	B.	
	B. (w.) XI. 787...	3.33,4	31,1	33,6	30,3	30,2	29,5				226.3.32,37				62,68	84.29.7,80	B.	
	B. (w.) XI. 844...	4.39,0	36,4	40,0	36,1	35,6	33,5				225.24.38,10				61,28	83.50.12,13	B.	
	(c) * R. 11 <sup>h</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	0.16,9	17,3	15,7	15,3	13,4	14,2				230.40.15,53				73,72	89.6.2,00	B.	
	(c) * R. 11 <sup>h</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	...	...	...	...	...	...		13,701		230.38.58,33				73,66	89.4.44,74	B.	
	B. (w.) XI. 1033...	0.14,8	14,6	13,6	12,1	10,6	11,4				235.5.12,90				86,57	93.31.12,22	B.	
	(a)(d) B. (w.) XII. 62...	4.58,2	58,6	57,3	56,4	55,5	55,0				237.44.56,82				95,80	96.11.5,37	B.	
	(a) B. (w.) XII. 138...	4.9,4	10,8	7,5	7,6	6,7	8,3				230.24.8,13				73,02	88.49.53,90	B.	
	B. (w.) XII. 218...	0.23,2	23,6	22,0	21,1	19,6	20,7				231.0.21,80				74,61	89.26.9,16	B.	
	B. (w.) XII. 291...	1.51,4	49,9	50,4	47,3	48,9	47,7				235.36.49,80				88,30	94.2.50,85	B.	
	B.A.C. 4201....	0.37,3	36,0	37,2	34,9	33,7	34,6				239.25.35,78				102,35	97.51.50,88	B.	
	(e) Polaris R.....	2.30,2	29,2	31,0	25,1	25,3	24,7		15,864		35.40.25,59	30,164	51,4	55,8	42,66	1.28.35,00	B.	
	(e) Polaris.....	1.51,4	51,4	53,6	48,6	50,1	47,1		15,864		143.4.48,74					1.28.38,83	B.	
	May 5	☉ N.L.....	0.20,0	22,0	20,0	18,4	17,6	18,2		9,599		215.0.27,82				41,39	73.25.41,96	B.
		☉ S.L.....	1.63,3	62,9	63,8	61,6	61,4	59,3		9,599		215.32.11,00				42,20	73.57.25,95	B.
		(f) Zenith Point....	2.26,7	26,3	29,5	25,4	24,6	23,3		9,589		179.22.35,25						
B. (w.) XII. 159...		2.29,1	28,2	29,7	25,5	25,6	25,9				229.17.28,05	30,090	51,2	43,6	70,51	87.43.11,31	B.	
B. (w.) XII. 309...		4.46,6	44,1	49,6	43,4	44,7	43,2				239.34.46,65				103,44	98.1.2,84	B.	
B. (w.) XII. 420...		2.6,6	5,1	5,9	3,8	3,5	3,6				231.2.5,35				75,02	89.27.53,12	B.	
B. (w.) XII. 475...		0.26,9	26,9	26,6	25,3	25,6	25,2				232.10.26,20				78,15	90.36.17,10	B.	
B. (w.) XII. 544...		1.28,2	26,2	26,5	24,6	24,8	24,0				237.6.26,13				93,87	95.32.32,75	B.	
28 Virginis.....		0.24,9	25,0	23,2	22,3	21,3	23,0			+2	238.15.23,33				98,15	96.41.34,23	B.	
B.A.C. 4294....		3.47,4	45,4	47,9	43,1	45,1	43,6				237.3.46,50				93,71	95.29.52,96	B.	
B. (w.) XII. 753...		4.35,3	33,4	37,6	32,1	32,8	31,5				238.14.35,12				98,10	96.40.45,97	B.	
(g) B. (w.) XII. 798...		0.20,8	21,0	19,6	18,3	18,4	19,4				232.55.19,68				80,30	91.21.12,73	B.	
B. (w.) XII. 869...		3.8,8	6,9	9,6	5,4	5,6	4,9				237.43.7,77				96,11	96.9.16,63	B.	
(h) B. (w.) XII. 953...		2.22,0	19,8	21,6	17,8	17,2	18,2				234.47.20,10				86,00	93.13.18,85	B.	
(i) * R. 12 <sup>h</sup> . 59 <sup>m</sup> . 45 <sup>s</sup>		3.6,5	4,9	7,6	3,6	2,8	1,8				232.28.5,43				78,99	90.53.57,17	B.	
May 7		(k)(a) B. (w.) XI. 570...	4.33,6	33,9	33,9	31,2	29,4	32,5				229.9.32,27	29,542	44,1	35,8	70,04	87.35.15,06	B.
		H. C. 22330....	1.24,9	24,0	25,9	21,9	20,3	22,5				228.31.23,65				68,49	86.57.4,89	B.
	B.A.C. 4025....	1.30,4	29,2	31,4	28,1	27,0	27,2				232.11.29,32				78,04	90.37.20,11	B.	
	B.A.C. 4039....	1.23,6	22,6	25,0	21,6	19,9	21,6				227.16.22,78				65,55	85.42.1,08	B.	
	(c) * R. 11 <sup>h</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	0.15,5	15,3	16,0	13,9	11,9	12,6				230.40.14,27				73,90	89.6.0,92	B.	
	(c) * R. 11 <sup>h</sup> . 54 <sup>m</sup> . 59 <sup>s</sup>	...	...	...	...	...	...		13,559		230.39.0,03				73,85	89.4.46,63	B.	
	B. (w.) XI. 1033...	0.18,1	15,1	17,6	14,4	11,6	14,9				235.5.15,35				86,79	93.31.14,89	B.	
	(l)(a) B. (w.) XII. 62...	4.59,9	59,0	59,8	57,6	55,5	56,8				237.44.58,08	29,538	42,5	34,8	96,22	96.11.7,05	B.	
	(m) B. (w.) XII. 218...	0.28,6	26,3	28,4	25,7	23,2	25,4				231.0.26,40				74,94	89.26.14,09	B.	
	B. (w.) XII. 291...	1.52,4	48,3	52,5	46,6	48,1	47,9				235.36.49,83				88,69	94.2.51,27	B.	
	(n) B. (w.) XII. 388...	4.23,9	19,3	26,6	20,3	19,4	19,5				232.49.22,75				80,00	91.15.15,50	B.	
	B. (w.) XII. 446...	3.36,1	31,1	38,2	31,3	30,0	31,2				234.28.34,02				85,00	92.54.31,77	B.	
	(a) χ Virginis.....	4.63,6	61,3	63,5	60,4	59,8	61,2				238.45.1,63				100,07	97.11.14,45	B.	
	B. (w.) XII. 599...	3.16,5	11,8	18,8	12,3	10,6	11,4				233.38.14,50				82,42	92.4.9,67	B.	
	(o) B. (w.) XII. 619...	...	...	...	...	...	...		15,461		233.36.20,59				82,32	92.2.15,66	B.	
	May 10	H. C. 22945....	4.45,9	42,9	49,4	42,2	43,4	41,4	+8,7			232.4.45,57	30,005	43,6	38,2	78,54	90.30.36,94	B.
		B. (w.) XII. 291...	1.48,4	46,7	49,0	44,4	45,9	45,3				235.36.47,13				89,44	94.2.49,40	B.
(g) B. (w.) XII. 361...		1.47,3	45,5	48,5	42,9	44,3	44,3			+2	234.51.45,95				86,97	93.17.45,75	B.	

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) Very great waving. (c) See April 30. (d) 'One of Mag. 10 north-following.' (e) Very faint in the reflection observation, the mercury being foul. Times by Molyneux, 1<sup>h</sup>. 0<sup>m</sup>. 14<sup>s</sup> and 1<sup>h</sup>. 1<sup>m</sup>. 10<sup>s</sup>. Molyneux slow on Hardy, 6P. 0. (f) A new mercury trough was used for the first time in this determination: the images steady and well defined. See the Introduction. (g) Faint. (h) 'The following of two.' (i) The R.A. is that of B. (w.) XII. 1025, for which this star was taken. For the correct R.A. see the Catalogue of N.P.D. (k) Faint from day-light. (l) 'One preceding and another following, both of considerably less N.P.D.' (m) 'A brighter north-following.' (n) 'One very faint of the same R.A. southward.' (o) 'Following the preceding two intervals.' After this the night was cloudy.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.		Observer.	
		A	B	C	D	E	F						Int.	Ext.		"	"		"
		"	"	"	"	"	"						"	"					
May 10	B. (w.) XII. 420.	2. 5,3	3,7	6,7	2,3	2,3	2,4	+8,7			231. 2. 4,38	30,005	43,6	38,2	75,65	89. 27. 52,86	B.		
	(a) B. (w.) XII. 493.	1. 62,4	60,0	63,3	59,9	60,4	58,6			230. 57. 1,35				75,43	89. 22. 49,61	B.			
	(b) B. (w.) XII. 544.	1. 24,9	23,2	25,5	22,4	21,7	22,0			237. 6. 23,68				94,66	95. 32. 31,17	B.			
	(c) Spica R.....	0. 11,8	11,3	11,9	9,5	5,7	8,0		16,227		296. 47. 59,84	30,013	42,2	36,3	115,53	100. 23. 38,86	B.		
	(d) Spica.....	4. 23,8	23,6	23,7	19,8	19,9	21,4		16,227	+2	241. 57. 11,85					100. 23. 40,21	B.		
	(e) ζ Virginis R.	1. 20,9	19,6	22,6	17,5	17,2	16,5		12,841	+2	307. 20. 20,17				77,01	89. 50. 40,01	B.		
	ζ Virginis.....	0. 48,6	47,4	49,4	45,6	47,3	45,9		12,841	+4	251. 24. 48,34					89. 50. 38,18	B.		
May 11	(f) (d) ⊙ S.L.....	4. 42,7	42,0	41,7	40,6	38,5	39,4		9,684		213. 54. 47,31	30,052	45,1	50,3	40,28	72. 20. 0,42	B.		
	⊙ N.L.....	2. 60,0	58,9	62,5	56,4	58,1	54,5		9,684		213. 23. 5,86				39,49	71. 48. 18,18	B.		
	Zenith Point....	2. 29,3	28,4	32,3	27,6	27,2	25,4		9,708		179. 22. 35,17						B.		
	(g) B. (w.) XII. 64...	0. 28,0	30,1	27,8	28,2	25,4	27,7				231. 55. 28,00	30,018	46,3	44,5	77,12	90. 21. 17,95	B.		
	(h) B. (w.) XII. 218...	0. 26,3	27,8	26,0	26,2	23,8	25,8				231. 0. 26,10				74,63	89. 26. 13,56	B.		
	(i) H. C. 23223.....	3. 14,1	12,8	14,8	10,6	9,6	11,4				234. 58. 13,15				86,21	93. 24. 12,19	B.		
	B. (w.) XII. 361...	1. 50,2	50,0	50,3	47,3	48,2	47,2				234. 51. 49,40				85,87	93. 17. 48,10	B.		
	B. (w.) XII. 420...	2. 7,0	5,3	6,3	5,1	3,5	3,8				231. 2. 5,77		44,0		74,78	89. 27. 53,38	B.		
	(k) B. (w.) XII. 493...	2. 3,5	3,0	3,6	1,1	1,2	0,0				230. 57. 2,37				74,55	89. 22. 49,75	B.		
	(l) B. (w.) XII. 599...	3. 17,2	15,6	18,8	13,9	13,5	13,6				233. 38. 16,38		43,3		82,28	92. 4. 11,49	B.		
	B.A.C. 4294.....	3. 47,1	46,3	48,4	43,8	45,1	44,9				237. 3. 47,02				93,54	95. 29. 53,39	B.		
	(m) B. (w.) XII. 730...	1. 9,3	9,5	9,4	8,8	6,8	8,2				238. 11. 9,00				97,71	96. 37. 19,54	B.		
	(l) B. (w.) XII. 829...	0. 52,5	53,0	52,5	51,6	51,8	50,6				231. 35. 52,25				76,41	90. 1. 41,49	B.		
	B. (w.) XII. 885...	4. 23,7	22,0	26,2	21,6	21,2	21,6				231. 54. 23,98				77,26	90. 20. 14,07	B.		
	(n) B. (w.) XII. 956...	3. 55,7	54,8	56,3	53,4	52,8	52,5				236. 53. 55,38				92,96	95. 20. 1,17	B.		
May 12	(o) ⊙ N.L.....	3. 35,5	33,9	36,4	32,8	33,1	29,7		11,914		213. 7. 54,68	29,992	47,9	53,9	38,75	71. 33. 6,26	B.		
May 13	(e) Spica R.....	4. 18,3	16,5	20,9	15,9	13,3	13,1		13,891		296. 47. 56,41	30,050	47,4	43,9	113,85	100. 23. 40,61	B.		
	Spica.....	3. 34,3	31,8	35,4	31,4	33,1	30,0		13,891	+1 1/4	241. 57. 12,50					100. 23. 39,18	B.		
May 14	χ Virginis.....	0. 2,5	4,9	1,6	2,5	1,9	2,6				238. 45. 2,67	29,963	49,5	46,7	99,02	97. 11. 14,52	B.		
	B.A.C. 4294.....	3. 47,5	47,4	48,5	44,8	46,4	44,5				237. 3. 47,62				92,72	95. 29. 53,17	B.		
	(p) B. (w.) XII. 730...	1. 10,0	11,0	9,9	8,8	8,0	8,4				238. 11. 9,73				96,84	96. 37. 19,40	B.		
	B. (w.) XII. 829...	0. 52,4	53,5	52,2	50,6	52,3	50,4				231. 35. 52,15		46,4		75,79	90. 1. 40,77	B.		
	(p)(n) B. (w.) XII. 956...	3. 56,9	56,3	57,6	54,0	55,2	53,3				236. 53. 56,70				92,19	95. 20. 1,72	B.		
	(q) B. (w.) XII. 1039...	3. 25,0	23,5	25,8	22,6	21,6	22,6				243. 53. 24,50				122,83	102. 20. 0,16	B.		
	(r) B. (w.) XIII. 59...	0. 23,9	25,8	23,6	22,8	21,6	23,5				239. 15. 23,65				101,10	97. 41. 37,58	B.		
	H. C. 24669.....	3. 24,3	24,9	26,0	22,1	22,4	22,6				237. 3. 24,70				92,75	95. 29. 30,28	B.		
May 16	(s) ⊙ S.L.....	1. 7,9	11,1	9,2	6,7	7,3	4,9	+6,5	7,805		212. 41. 53,89	29,700	54,8	64,4	36,96	71. 7. 3,68	B.		
	(d) ⊙ N.L.....	4. 28,5	31,5	28,9	29,1	28,5	25,3		7,805		212. 10. 14,31				36,23	70. 35. 23,37	B.		
	(t) Zenith Point....	2. 24,2	25,7	23,3	22,3	21,3	19,3		9,375		179. 22. 36,24						B.		
May 17	(u) ⊙ S.L.....	3. 19,5	18,3	18,4	16,4	18,1	16,0		10,070		212. 28. 17,04	29,716	56,9	61,8	36,86	70. 53. 25,66	B.		
	⊙ N.L.....	1. 37,5	38,8	36,6	35,8	35,1	33,2		10,070		211. 56. 35,06				36,12	70. 21. 42,94	B.		
May 18	⊙ N.L.....	3. 33,1	29,4	32,7	28,1	29,3	25,0		10,547		211. 43. 18,94	29,896	56,1	64,3	35,85	70. 8. 26,55	B.		
	⊙ S.L.....	0. 8,0	9,9	9,1	6,2	7,4	3,5		10,547		212. 14. 55,96				36,58	70. 40. 4,30	B.		
May 19	⊙ N.L.....	0. 29,9	32,3	28,1	30,1	27,5	26,6		10,546		211. 30. 17,79	29,930	57,2	66,8	35,42	69. 55. 24,97	B.		
May 21	⊙ N.L.....	0. 46,4	47,0	44,9	43,1	43,4	42,0		10,734		211. 5. 29,32	30,030	53,8	62,4	35,27	69. 30. 36,35	B.		
	⊙ S.L.....	2. 22,3	20,6	21,6	19,2	16,9	14,6		10,734		211. 37. 4,39				36,00	70. 2. 12,15	B.		
May 24	⊙ N.L.....	1. 31,1	28,1	30,6	28,2	26,3	26,8	+6,6	12,106		210. 30. 44,90	29,980	57,6	67,7	34,06	68. 55. 50,34	T.		
	⊙ S.L.....	2. 66,9	61,1	66,2	61,9	61,7	59,6		12,106		211. 2. 19,64				34,77	69. 27. 25,79	T.		
May 25	⊙ S.L.....	2. 8,0	7,8	8,1	8,1	4,6	2,0		11,932		210. 51. 26,60	29,700	61,2	70,6	34,01	69. 16. 31,99	T.		
	⊙ N.L.....	0. 33,1	34,2	29,3	32,9	28,7	28,4		11,932		210. 19. 50,92				33,31	68. 44. 55,61	T.		

ONE REVOLUTION of the MICROMETER = 20", 859. ONE INTERVAL from the middle wire for an Equatorial Star = 16", 6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8", 00.

(a) 'Two fainter southward.' (b) Cloudy. (c) The new mercury trough was used in these observations. (d) Negative correction for Runs.  
 (e) 'Very good.' (f) Great motion. (g) In too much day-light. (h) 'Many in the field.' (i) 'One south-preciding.' (k) 'Two southward  
 and one preceding.' The reading of Microscope A has been increased 1'. See the observation of May 10, which agrees with Bessel. (l) 'A brighter following.'  
 (m) 'One north-preciding about 10s.' (n) 'One north-preciding.' (o) Seen but a few seconds: cloudy. (p) Very faint. (q) 'Two fainter south-  
 preceding.' (r) 'A brighter following of considerably less N.P.D.' (s) Cloudy. Great change of Temperature between May 14 and 16. (t) Taken  
 May 16, 22h, after clearing the mercury in the new trough. A large party had been in the Circle Room the day before, and the microscope reflectors had been  
 moved. (u) During the latter part of the month the assistants were engaged with observations and calculations for the determination of the Longitude of the  
 Observatory by galvanic signals.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	"					
May 26	(a) ☉ N.L..... ☉ S.L.....	3.62,2 0.36,9	63,0 36,0	60,6 34,7	61,0 34,9	59,1 32,2	57,6 31,6	+6,6	9,104 9,104	+1 $\frac{1}{2}$ +2 $\frac{1}{2}$	210. 9. 19,38 210. 40. 53,88	29,652	62,0	67,6	33,23 33,92	68. 34. 23,99 69. 5. 59,18	T. T.		
May 27	☉ S.L..... (a) ☉ N.L.....	1.32,8 4.57,2	31,7 58,2	30,2 56,0	30,1 55,5	29,1 55,4	26,9 52,5		12,161 12,161		210. 30. 45,39 209. 59. 10,70	29,648	63,7	70,9	33,48 32,79	68. 55. 50,25 68. 24. 14,87	T. T.		
June 1	(b) Zenith Point.... Zenith Point....	2.21,3 2.44,2	17,6 39,3	22,4 45,1	17,4 39,6	15,1 38,7	13,8 36,0		9,143 10,198		179. 22. 36,31 179. 22. 36,94						T. T.		
June 8	☉ N.L..... ☉ S.L.....	0.55,5 2.28,9	54,9 26,6	53,3 26,8	51,3 25,1	52,5 24,1	46,9 19,0	+5,2	7,438 7,438		208. 26. 45,99 208. 58. 18,94	30,032	64,0	72,3	31,12 31,80	66. 51. 48,47 67. 23. 22,10	T. T.		
June 10	(c) α Herculis R. .... α Herculis ..... (c) α Ophiuchi R. .... (a) α Ophiuchi ..	0.25,1 2.21,7 1.14,1 4.57,0	20,9 15,6 9,0 52,9	22,3 19,8 10,4 52,2	20,9 16,7 7,9 50,3	18,0 15,9 5,7 50,6	19,2 13,0 5,6 50,4		13,489 13,489 11,147 11,147	+1 $\frac{1}{2}$	321. 44. 8,35 217. 1. 4,83 319. 50. 45,05 218. 54. 28,29	29,824	61,0	56,7	44,21 47,30	75. 26. 20,50 75. 26. 20,40 77. 19. 46,89 77. 19. 46,95	T. T. T. T.		
June 11	☉ S.L..... ☉ N.L..... (b) Zenith Point.... Zenith Point....	3.33,4 1.57,2 2.27,2 2.43,2	31,9 58,7 20,9 36,9	31,9 54,7 26,1 42,2	31,1 57,1 22,0 37,4	28,9 54,8 19,5 36,0	25,0 50,5 17,9 34,3		8,271 8,271 9,343 10,090	+1 $\frac{1}{2}$ +2 $\frac{1}{4}$	208. 44. 7,25 208. 12. 32,34 179. 22. 36,38 179. 22. 36,90	29,748	69,0	77,7	30,87 30,21	67. 9. 9,48 66. 37. 33,91	T. T. T. T.		
June 14	ε Bootis R. .... ε Bootis ..... (d) β Bootis R. .... β Bootis ..... (d) β Libræ .....	2.55,9 3.61,7 4.20,8 2.44,4 3.65,0	48,8 56,3 13,4 41,1 57,2	52,4 61,8 21,9 42,1 63,4	50,2 59,1 17,1 42,1 59,7	47,9 56,8 14,0 38,9 58,1	46,8 52,7 13,0 36,7 56,7		12,389 12,389 12,552 12,552	+1 +2 $\frac{1}{2}$	334. 52. 0,91 203. 53. 9,42 348. 8. 24,20 190. 36. 48,45 240. 24. 0,72	29,986	60,7	59,4	26,15 11,40	62. 18. 9,88 62. 18. 6,93 49. 1. 31,84 49. 1. 31,21 98. 50. 15,26	T. T. T. T. T.		
June 15	(e) ☉ S.L..... (a) ☉ N.L.....	1.18,6 4.46,3	16,4 45,0	16,2 42,7	15,0 42,0	12,2 41,4	10,0 38,9	+7,0	11,274 11,274		208. 30. 48,46 207. 59. 16,08	29,990	66,0	72,3	31,16 30,49	66. 55. 51,15 66. 24. 18,10	T. T.		
June 16	(e) (f) ☉ N.L..... ☉ S.L..... δ Ophiuchi R. .... δ Ophiuchi ..... (g) α Herculis R. .... α Herculis ..... (h) α Ophiuchi R. .... (a) α Ophiuchi .....	2.13,4 3.44,5 2.57,4 3.26,0 0.15,8 2.12,2 1.19,6 4.60,0	7,1 38,0 52,0 19,9 13,8 7,0 16,1 56,0	9,6 42,0 54,8 23,4 12,7 11,7 17,0 57,0	8,4 39,4 52,3 20,6 13,5 7,1 15,2 56,0	6,1 36,7 49,8 17,9 9,3 4,9 11,9 54,3	5,0 33,0 48,7 17,9 10,0 4,0 12,3 52,4		10,513 10,513 11,461 11,461 13,230 13,230 11,439 11,439	+1 +3	207. 56. 58,07 208. 28. 29,17 303. 52. 22,69 234. 52. 51,25 321. 44. 5,19 217. 1. 1,29 319. 50. 45,63 218. 54. 26,22	30,036 30,028 30,028	64,5 60,1 58,5	72,0 58,0	30,51 31,18 83,61 93. 18. 45,39 93. 18. 46,39 75. 26. 23,68 75. 26. 17,22 77. 19. 46,34 77. 19. 45,25	66. 22. 0,11 66. 53. 31,88 93. 18. 45,39 93. 18. 46,39 75. 26. 23,68 75. 26. 17,22 77. 19. 46,34 77. 19. 45,25	T. T. T. T. T. T. T. T.		
June 17	☉ S.L..... ☉ N.L..... α Libræ ..... B.A.C. 6034 ..... H. C. 33089 .....	1.45,4 0.10,8 3.60,7 0.63,2 4.42,9	41,0 8,2 54,0 56,4 38,0	42,0 7,5 58,5 58,7 37,1	42,2 7,0 55,0 55,9 38,0	38,7 4,6 53,2 54,3 36,0	35,7 2,1 51,2 54,9 37,5		10,104 10,104 9,176 9,190		208. 26. 39,05 207. 55. 4,55 246. 58. 56,35 251. 1. 14,64 248. 34. 56,23	30,012 29,992 30,000	65,0 62,0 57,2	72,1 62,0 56,3	31,11 30,44 137,53 172,17 150,82	66. 51. 41,69 66. 20. 6,52 105. 25. 44,41 109. 28. 38,34 107. 1. 58,58	T. T. T. T. T.		
June 18	Zenith Point....	2.25,7	21,1	25,0	22,1	18,6	16,9		9,312		179. 22. 36,47						T.		
June 20	(h)(i) ☉ N.L..... ☉ S.L.....	5.38,8 1.66,6	32,4 61,6	38,7 64,3	34,1 62,6	31,3 59,5	35,9 56,5		5,992 5,992	+1 +3	207. 52. 0,17 208. 23. 26,50	29,536	60,2	61,8	30,51 31,18	66. 17. 2,21 66. 48. 29,21	C. C.		
June 21	Arcturus R. .... Arcturus .....	2.14,2 2.38,5	9,4 33,3	12,1 36,1	9,7 33,1	7,0 33,7	12,1 28,7	+6,5	9,410 9,410	-1 +2 $\frac{1}{2}$	327. 7. 23,48 211. 37. 47,12	29,706	58,1	52,0	36,39	70. 2. 57,21 70. 2. 55,21	C. C.		
June 24	☉ S.L..... ☉ N.L..... (k) Zenith Point....	0.30,5 3.62,7 3.21,0	29,6 59,8 18,1	27,6 61,7 21,0	27,8 60,5 18,6	27,5 60,4 17,1	22,4 53,5 12,3		11,246 11,246 12,034		208. 25. 1,68 207. 53. 34,64 179. 22. 36,30	29,768	65,0	75,2	30,64 29,98	66. 50. 4,02 66. 18. 36,32	C. C. C.		
June 29	(l) ☉ S.L..... ☉ N.L.....	0.54,6 4.26,8	53,0 22,2	52,0 25,8	52,0 23,7	51,5 20,5	45,7 17,0		8,947 8,947	-2	208. 36. 13,95 208. 4. 45,59	29,650	63,2	68,2	31,17 30,51	67. 1. 16,82 66. 29. 47,80	C. C.		

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) The mean of the two determinations is adopted. See the Introduction. (c) Very cloudy: the latter star scarcely seen.  
 (d) Very much obscured by cloud. (e) Cloudy. (f) Without the dark glass. (g) A diffused mass of light: bisection very doubtful. (h) Great motion.  
 (i) The observation was hurried in consequence of difficulty in opening the shutter. (k) For an account of this determination of Zenith Point see the Introduction.  
 (l) Very unsteady and ragged, and clouds passing rapidly. The reading of F for S.L. has been corrected by +3,4 for its Run of 5', the division in advance having been inadvertently bisected.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.			Inch.	o	o	"	o	
June 29	$\alpha$ Coronæ R. ....	3.33,0	28,0	32,3	29,1	28,8	25,0	+6,5	11,411	-1	334.23.0,61	29,738	61,2	58,0	26,59	62.47.10,28	C.
	$\alpha$ Coronæ .....	2.42,0	38,0	39,9	39,0	37,0	33,9		11,411	+2	204.22.9,75					62.47.8,04	C.
July 1	$\odot$ N.L. ....	2.16,5	13,5	15,4	13,4	11,3	8,0	+4,6	10,399	-1	208.12.5,15	29,684	60,0	62,6	31,04	66.37.8,71	C.
	(a) $\odot$ S.L. ....	3.45,9	40,8	45,3	40,6	40,2	34,9		10,399	+1	208.43.33,54				31,72	67.8.37,78	C.
	72 Ophiuchi R. ....	3.70,0	63,4	68,8	64,2	62,7	59,3		11,800	-2	316.43.27,92	29,776	55,8	51,0	53,32	80.27.8,88	C.
	72 Ophiuchi. ....	2.25,4	19,8	22,8	20,7	18,5	17,4		11,800	+2	222.1.43,68					80.27.9,52	C.
	B.A.C. 6271. ....	0.66,6	61,6	62,4	61,0	61,1	58,3		12,753		260.50.4,57				367,87	119.20.44,96	C.
July 2	(a) $\odot$ S.L. ....	3.46,0	41,1	45,1	41,2	39,0	35,5		12,535	-2	208.47.49,37	29,990	58,1	61,1	32,23	67.12.54,12	C.
July 4	$\odot$ N.L. ....	0.56,4	55,0	53,5	54,1	52,7	47,6		9,332		208.26.7,28	30,106	62,0	67,8	31,46	66.51.11,26	C.
	$\odot$ S.L. ....	2.24,0	21,6	22,2	22,0	19,6	16,3		9,332		208.57.35,25				32,14	67.22.39,91	C.
July 6	$\odot$ S.L. ....	0.61,0	58,4	58,9	57,9	57,6	52,1		15,715	-2	209.8.59,00	29,900	67,0	74,8	31,73	67.34.3,25	C.
	$\odot$ N.L. ....	4.32,3	26,5	30,6	26,2	26,1	20,5		15,715		208.37.28,51				31,06	67.2.32,09	C.
	Zenith Point. ....	2.35,4	32,2	33,4	31,6	31,4	27,1		9,844		179.22.35,48						C.
July 7	$\odot$ N.L. ....	3.62,3	58,1	61,4	57,5	59,7	51,6		10,690		208.43.44,66	29,900	65,9	75,4	31,16	67.8.48,30	C.
	$\odot$ S.L. ....	0.29,0	28,0	26,6	26,2	26,4	21,4		10,690		209.15.11,94				31,83	67.40.16,29	C.
July 9	$\rho$ Herculis $\mathcal{J}$ f. ....	3.23,0	14,6	20,4	17,7	12,4	12,0	+6,5	10,689		194.18.3,03	29,884	60,8	59,0	15,25	52.42.50,74	T.
	(b) $\alpha$ Ophiuchi. ....	4.27,6	22,9	21,9	21,9	20,1	20,5				218.54.22,35				47,18	77.19.41,99	T.
	(b) $\alpha$ Herculis R. ....	4.57,0	53,4	55,0	54,6	52,3	47,9		9,255	+1 $\frac{1}{2}$	353.15.8,54				6,14	43.54.41,14	T.
	(b) $\alpha$ Herculis. ....	4.50,0	44,9	46,0	46,1	43,9	42,0		9,255	+2 $\frac{1}{2}$	185.30.1,94					43.54.40,54	T.
	H. C. 32648. ....	3.37,9	30,7	34,4	32,2	29,5	28,4				251.23.32,95				174,27	109.50.59,68	T.
	(c) H. C. 33031. ....	4.23,2	15,0	21,3	16,8	12,9	12,6			+2 $\frac{1}{2}$	249.9.17,58	29,884	60,7	58,4	154,15	107.36.24,19	T.
	(c) H. C. 33386. ....	0.49,4	43,9	46,1	45,0	42,5	40,2			+2	254.40.44,41				214,68	113.8.51,55	T.
	H. C. 33709. ....	3.57,1	49,8	55,9	50,3	49,0	47,5				251.48.52,43				178,86	110.16.23,75	T.
July 11	Zenith Point. ....	2.33,0	27,2	31,4	28,0	25,0	23,0		9,661		179.22.35,54						T.
July 15	(d) $\rho$ Herculis $\mathcal{J}$ f. R. ....	2.16,8	11,9	16,2	13,5	10,0	8,4	+6,8	10,110		344.27.11,00	29,542	51,1	56,3	15,16	52.42.47,35	T.
	$\rho$ Herculis $\mathcal{J}$ f. ....	2.68,9	62,1	67,9	64,7	59,4	59,6		10,110		194.18.2,15					52.42.50,12	T.
	(d) $\alpha$ Ophiuchi R. ....	2.17,0	12,0	15,1	10,2	8,4	7,9		13,959		319.50.49,69				46,89	77.19.40,39	T.
	(e) $\alpha$ Ophiuchi. ....	0.49,8	45,2	45,0	44,8	43,2	43,0		13,959	+1 $\frac{1}{4}$	218.54.22,80					77.19.42,50	T.
	(f) H. C. 32271. ....	4.39,4	35,2	33,9	34,0	31,7	33,1		12,259		248.58.48,46				151,51	107.25.52,78	T.
	(g) $\psi$ Draconis R. ....	3.51,0	46,0	51,1	46,3	45,2	41,9		13,111	-1 $\frac{1}{4}$	19.22.42,86				20,70	17.46.39,63	T.
	$\psi$ Draconis. ....	3.39,8	34,1	40,1	34,8	33,7	30,8		13,111	+1 $\frac{1}{4}$	159.22.32,21					17.46.44,32	T.
	7 Sagittarii. ....	4.19,4	13,2	19,1	14,8	12,1	11,7		13,111	+1 $\frac{1}{2}$	255.48.10,98				230,91	114.16.34,70	T.
	(h) * R. 17 <sup>b</sup> . 59 <sup>m</sup> . 45 <sup>s</sup> ....	0.39,4	34,9	36,3	34,8	32,4	32,2			+1	251.25.35,08				173,58	109.53.1,47	T.
	B.A.C. 6158. ....	...	...	...	...	...	...		13,071		251.24.31,07				173,40	109.51.57,28	T.
	B.A.C. 6195. ....	3.29,0	22,7	26,2	22,6	21,1	20,9				250.3.24,52			54,8	161,14	108.30.38,47	T.
	H. C. 33627. ....	...	...	...	...	...	...		7,349	+1	250.4.19,77				161,28	108.31.33,86	T.
	(i) $\delta$ Ursæ Minoris R. ....	0.28,2	26,0	24,9	24,2	22,1	21,7		10,891		33.45.5,90	29,540	57,4	54,4	39,03	3.23.58,26	T.
	(i) $\delta$ Ursæ Minoris R. ....	...	...	...	...	...	...		10,919		33.45.5,15					3.23.59,01	T.
	(i) $\delta$ Ursæ Minoris R. ....	...	...	...	...	...	...		10,821		33.45.6,53					3.23.57,66	T.
	(i) $\delta$ Ursæ Minoris. ....	0.27,4	23,4	23,5	23,0	19,0	19,1		10,910		145.0.6,04					3.23.59,82	T.
	(i) $\delta$ Ursæ Minoris. ....	...	...	...	...	...	...		10,957		145.0.5,89					3.23.59,67	T.
	(i) $\delta$ Ursæ Minoris. ....	...	...	...	...	...	...		10,967		145.0.6,30					3.24.0,08	T.
	(k) $\beta$ Lyræ R. ....	0.36,9	32,9	33,9	31,0	29,9	28,1		6,279	-2 $\frac{1}{4}$	240.21.49,82			53,6	19,70	56.48.13,07	T.
	$\beta$ Lyræ. ....	1.67,1	61,7	65,8	63,1	59,9	59,1		6,279		198.23.20,87					56.48.13,38	T.
	$\zeta$ Aquilæ. ....	0.48,3	43,2	44,8	42,1	41,0	40,0				217.55.43,40				45,53	76.21.1,74	T.
July 16	(l) $\tau$ Herculis R. ....	0.17,2	14,4	16,8	12,9	12,1	10,0		10,641		353.50.0,58	29,564	56,3	54,8	5,54	43.19.48,15	T.
	$\tau$ Herculis. ....	0.31,1	28,0	27,9	27,1	23,7	23,8		10,641	+1 $\frac{3}{4}$	184.55.14,15					43.19.52,50	T.
July 18	Zenith Point. ....	2.40,5	36,0	39,6	36,0	34,8	30,5		10,064		179.22.35,49						T.
	(m) Zenith Point. ....	2.28,2	24,5	27,4	24,5	22,4	19,4		9,524		179.22.34,88						T.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Clouded and bisected doubtfully. (b) Negative correction for Runs. (c) Cloudy. (d) The mercury disturbed by a boisterous S.W. wind.  
 (e) 'Very good.' (f) 'A brighter follows.' (g) 'The brighter of two.' (h) 'A coarse double follows.' H. C. 33236, the star intended to be taken,  
 followed by 37. (i) Times of bisection by Molyneux, 18<sup>m</sup>.19<sup>m</sup>.23<sup>m</sup>, 19<sup>m</sup>.59<sup>m</sup>, 21<sup>m</sup>.18<sup>m</sup>, 22<sup>m</sup>.58<sup>m</sup>, 23<sup>m</sup>.42<sup>m</sup> and 24<sup>m</sup>.11<sup>m</sup>. Molyneux slow by a circle transit of  
 $\zeta$  Aquilæ, 1<sup>m</sup>.36<sup>m</sup>. (k) Image too diffused from high wind. Microscope B, which was accidentally omitted, is supplied from the readings for  $\delta$  Ursæ Minoris  
 and  $\zeta$  Aquilæ. (l) Scarcely visible. (m) This Zenith Point was taken after reversing the position of the mercury trough.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
July 19	$\alpha$ Lyrae R. ....	1.47,7	43,5	47,4	44,8	43,3	41,1	+6,8	3,354	- $\frac{3}{4}$	345.49. 3,54	29,950	58,8	56,8	13,89	51.20.53,49	T.		
	$\alpha$ Lyrae .....	3.52,4	46,9	52,1	49,4	46,7	44,0		3,354	+1	192.56. 8,20					51.20.54,90	T.		
	(a) $\beta$ Lyrae R. ....	3.60,0	53,9	59,8	54,9	54,0	49,7		1,558	- $\frac{1}{2}$	340.21.52,33				19,84	56.48.10,70	T.		
	$\beta$ Lyrae .....	0.27,1	23,8	23,8	24,0	20,3	17,9		1,558	+2 $\frac{1}{2}$	198.23.19,60					56.48.12,25	T.		
	$\delta$ Aquilæ R. ....	1.27,7	24,0	24,6	22,9	20,9	18,3		12,655	- $\frac{3}{4}$	310. 0.27,99	29,950	58,7	56,9	67,00	87.10.22,20	T.		
	$\delta$ Aquilæ .....	0.42,6	39,3	39,7	37,9	36,9	36,0		12,655	+1 $\frac{1}{2}$	228.44.43,52					87.10.23,33	T.		
July 20	(b) $\odot$ S.L. ....	0.66,2	64,4	63,5	63,3	61,5	57,7		9,565	+2 $\frac{1}{2}$	211.11.12,07	29,938	62,0	67,6	34,93	69.36.19,81	C.		
	$\odot$ N.L. ....	4.37,5	33,2	37,2	33,4	33,0	29,0		9,565	+4	210.39.44,39				34,22	69. 4.51,42	C.		
July 22	H. C. 39450 ....	1.63,0	61,0	60,8	59,8	57,6	55,5	+4,5	9,565		250. 7. 8,99	29,830	59,0	56,1	162,84	108.34.23,88	T.		
	(c) $\epsilon$ Aquarii R. ....	4.50,0	48,8	45,8	46,5	44,7	42,9		9,839	-1	297. 9.49,81				108,55	100. 1.42,99	T.		
	$\epsilon$ Aquarii .....	0.21,6	18,0	17,3	17,1	15,4	14,3		9,839	+1 $\frac{1}{2}$	241.35.20,62					100. 1.40,92	T.		
July 23	(d) $\odot$ N.L. ....	0.30,6	29,6	28,3	29,0	27,0	25,4		10,812	+2 $\frac{1}{2}$	211.15.11,41	29,970	62,0	68,5	35,00	69.40.18,16	C.		
	$\odot$ S.L. ....	1.60,3	57,3	57,6	56,1	55,8	51,5		10,812	+4	211.46.40,05				35,72	70.11.47,52	C.		
July 25	(e) $\odot$ S.L. ....	1.39,0	35,7	35,9	34,3	34,7	33,2		8,975	-2	212.11.57,61	29,738	62,2	67,1	36,12	70.37. 5,48	C.		
	$\odot$ N.L. ....	0. 7,6	5,6	4,6	2,6	3,7	0,2		8,975		211.40.25,45				35,40	70. 5.32,60	C.		
	(f) Zenith Point. ....	3.27,1	23,2	27,6	22,9	21,4	18,7		12,292		179.22.36,20							C.	
	Zenith Point. ....	2.63,6	59,7	63,5	59,9	58,7	54,1		11,154		179.22.36,30							C.	
July 26	(e) $\odot$ N.L. ....	4.11,4	6,4	9,7	5,6	6,3	0,5		11,570	-2	211.53.35,06	29,752	63,4	67,8	35,66	70.18.42,47	C.		
	$\odot$ S.L. ....	0.41,9	39,6	38,3	38,0	37,6	33,5		11,570		212.25. 5,50				36,39	70.50.13,64	C.		
July 29	(g) $\odot$ S.L. ....	1.46,7	40,5	41,8	39,5	39,7	36,5		10,785		213. 6.24,66	29,868	61,6	66,5	37,60	71.31.34,01	C.		
July 30	(h) $\odot$ S.L. ....	1.17,5	14,2	13,9	12,8	12,1	8,4	+4,8	11,177		213.20.48,80	29,716	62,0	64,7	37,88	71.45.58,58	C.		
	$\odot$ N.L. ....	4.47,9	42,0	45,5	42,5	41,7	36,6		11,177		212.49.18,90				37,13	71.14.27,93	C.		
Aug. 2	(f) Zenith Point. ....	2.67,3	62,7	67,3	63,0	62,4	57,6		11,300		179.22.36,75							T.	
	Zenith Point. ....	2.52,1	48,6	52,3	47,9	47,6	42,9		10,651		179.22.35,44							T.	
Aug. 4	(i) $\odot$ N.L. ....	0.40,4	37,0	35,6	37,0	33,7	32,3		9,641		214. 5.43,59	30,012	63,6	65,7	39,26	72.30.54,75	T.		
	$\odot$ S.L. ....	2.11,3	7,2	8,6	6,6	4,8	0,9		9,641		214.37.14,39				40,04	73. 2.26,33	T.		
	(k) $\alpha$ Delphini R. ....	0.13,4	9,5	9,0	7,8	7,9	5,0		12,163		322.34.23,66	30,054	58,0	55,3	43,34	74.36. 3,78	T.		
	$\alpha$ Delphini .....	1.38,0	32,7	35,9	33,3	32,9	29,7		12,163		216.10.48,88					74.36. 4,12	T.		
	$\nu$ Cygni R. ....	2.37,3	32,0	36,1	32,8	31,8	28,9		13,809		347.46.14,12				11,91	49.23.41,89	T.		
	$\nu$ Cygni .....	0.16,3	12,5	13,0	12,9	10,4	8,9		13,809	+4 $\frac{1}{2}$	190.58.55,53					49.23.39,34	T.		
Aug. 5	(m) $\odot$ S.L. ....	3.35,1	29,8	33,7	29,8	27,1	24,1		10,061		214.53.29,23	30,122	63,6	66,6	40,51	73.18.41,64	T.		
	$\odot$ N.L. ....	1.62,6	56,6	58,6	56,1	55,6	51,6		10,061		214.21.55,90				39,73	72.47. 7,53	T.		
Aug. 6	(m) $\odot$ N.L. ....	2.69,1	63,6	66,4	64,7	62,7	58,0	+6,8	9,461		214.38.16,02	30,210	65,4	68,8	40,08	73. 3.28,52	T.		
	(n) $\odot$ S.L. ....	4.44,7	42,7	40,4	40,8	40,7	35,8		9,461		215. 9.52,02				40,86	73.35. 5,30	T.		
	$\alpha$ Lyrae R. ....	1.41,7	37,0	40,3	37,9	39,1	34,0		2,807	+2 $\frac{1}{2}$	345.49. 7,99	30,216	61,4	57,2	14,00	51.20.49,59	T.		
	$\alpha$ Lyrae .....	3.36,9	32,1	37,3	33,4	31,4	28,9		2,807	+4 $\frac{1}{2}$	192.56. 6,61					51.20.53,05	T.		
	(o) $\epsilon^1$ Lyrae sf. R. ....	2.53,3	48,4	52,7	49,4	48,7	45,2		14,412	+1	346.41.18,11				13,07	50.28.38,54	T.		
	$\epsilon^1$ Lyrae sf. ....	0.30,7	28,0	27,6	27,4	25,1	22,9		14,412	+2 $\frac{1}{2}$	192. 3.55,80					50.28.41,29	T.		
	(p) H. C. 35867. ....	2.20,0	16,1	16,7	16,0	13,0	12,2			+2	252. 7.15,95			56,5	184,89	110.34.53,26	T.		
Aug. 8	(q) $\odot$ N.L. ....	2.17,9	12,9	14,2	14,2	11,3	8,2		10,802		215.11.56,89	30,212	62,5	65,9	41,15	73.37.10,46	B.		
	$\odot$ S.L. ....	3.53,2	48,6	50,4	48,5	46,3	43,7		10,802		215.43.32,59				41,95	74. 8.46,96	B.		
	(r) $\mu^1$ Sagittarii R. ....	2.13,9	9,9	9,3	8,9	6,3	4,2		9,605		286. 7.17,47	30,208	62,4	58,3	189,99	111. 5.36,10	B.		
	$\mu^1$ Sagittarii .....	2.45,5	42,0	41,7	40,7	40,4	38,3		9,605	+1 $\frac{1}{2}$	252.37.50,14					111. 5.32,55	B.		
	(s) H. C. 33974. ....	1.53,7	50,2	50,6	49,1	49,8	46,9				249.16.50,47				156,88	107.43.59,77	B.		
	(s) B.A.C. 6292. ....	2.31,0	28,0	28,5	27,8	26,9	24,0				250.32.28,27				168,04	108.59.48,73	B.		
	(s) H. C. 34354. ....	2.28,0	24,8	25,5	23,9	24,4	21,3				250.12.25,20	30,203	61,6	57,3	165,25	108.39.42,87	B.		
	H. C. 34627. ....	2.55,3	52,2	54,4	51,6	53,3	48,1				255.37.53,13				232,63	114. 6.18,18	B.		

ONE REVOLUTION of the MICROMETER = 20'',859. ONE INTERVAL from the middle wire for an Equatorial Star = 16'',6.  
 ASSUMED CO-LATITUDE = 37°.47'.8'',00.

(a) Extremely faint. (b) Taken hurriedly, the bisections being delayed by a cloud. (c) 'Good.' Negative correction for Runs. (d) The Microscopes had all to be adjusted to my focus, and the observation was consequently delayed and taken hurriedly. (e) Bisected at the first wire for fear of interruption by clouds. (f) The Circle was moved between the two sets to alter the positions of the images of the wires in the field. (g) N.L. lost by wrong setting, the pointer having been displaced. (h) Very ragged and unsteady. (i) Fringed and unsteady. S.L. was bisected hurriedly, the same observer taking the transit of 2 L. (j) Diffused. (k) Delay by cloud. (m) The transits were also taken by T. (n) Negative correction for Runs. (o) 'The sf. of the double star.' (p) 'A fainter south-following.' (q) Great motion. (r) Very doubtful bisection, the star being extremely faint from cloud. (s) The sky very thick towards the South.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Aug. 8	(a) B.A.C. 6544.....	3.26,5	22,2	25,6	22,2	21,8	19,5	+6,8			250.43.23,73	30,206	60,5	56,7	170,30	109.10.46,45	B.
	(b)(c) B.A.C. 6587.....	4.57,5	52,2	54,5	54,8	54,1	50,7				250.39.53,95				169,75	109.7.16,12	B.
	B.A.C. 6773.....	1.6,8	3,4	3,4	2,2	2,6	0,3				252.51.3,35			55,3	193,75	111.18.49,52	B.
	ω Sagittarii.....	1.44,5	41,8	41,6	40,3	39,9	38,5				258.11.41,48				286,34	116.41.0,24	B.
	(b) H. C. 38104.....	4.59,8	55,9	55,2	55,9	55,8	52,7				247.49.55,87				146,44	106.16.54,73	B.
	(d) H. C. 38290.....	3.31,1	27,4	30,6	26,2	27,0	23,8				250.43.28,47				170,81	109.10.51,70	B.
Aug. 9	(e) ⊙ N.L.....	0.30,6	26,9	26,6	27,1	24,4	23,0		9,043		216.0.46,49	30,250	62,8	69,0	42,19	74.26.1,10	B.
	⊙ N.L.....	3.52,5	49,0	50,6	49,6	47,6	42,8		9,043		215.29.9,51				41,39	73.54.23,32	B.
	(f) Draconis R.....	4.11,5	7,5	12,2	8,4	7,3	3,4		11,025		6.38.47,94	30,268	65,1	66,9	7,28	30.30.48,36	B.
	⊥ Draconis.....	1.46,2	43,4	44,5	42,3	43,5	37,4		11,025	+2	172.6.22,99					30.30.48,13	B.
	⊥ Draconis R.....	3.31,2	27,0	29,9	27,2	25,5	23,3		11,945		19.22.47,56	30,289	63,4	60,4	21,05	17.46.34,97	B.
	⊥ Draconis.....	2.10,5	6,0	9,2	5,6	5,4	2,2		9,129		159.22.25,14					17.46.36,51	B.
	B.A.C. 6048 R.....	3.31,2	27,0	29,9	27,2	25,5	23,3		10,572		19.23.16,20				21,06	17.46.6,32	B.
	B.A.C. 6048.....	2.10,5	6,0	9,2	5,6	5,4	2,2		10,572		159.21.55,04					17.46.6,40	B.
	(g) μ <sup>1</sup> Sagittarii R.....	2.21,8	18,7	18,4	16,3	14,9	12,8		9,872		286.7.20,34				189,67	111.5.32,91	B.
	μ <sup>1</sup> Sagittarii.....	2.51,2	46,6	47,3	46,4	45,9	42,5		9,872	+2	252.37.49,72					111.5.31,81	B.
	(h) δ Ursæ Minoris R.....	1.29,6	27,3	25,6	25,5	24,1	22,5		13,532		33.45.11,20		58,1	39,72		3.23.52,66	B.
	δ Ursæ Minoris.....	1.18,8	15,4	16,6	15,6	13,6	10,4		13,532		145.0.1,96					3.23.54,66	B.
	(h) δ Ursæ Minoris R.....	1.13,5	11,8	9,6	10,6	8,1	6,4		12,767		33.45.8,71					3.23.55,15	B.
	δ Ursæ Minoris.....	0.58,2	54,1	55,2	54,1	53,4	49,2		12,767		145.0.1,72					3.23.54,42	B.
	(i) H. C. 34627.....	2.54,8	50,9	52,5	50,8	50,9	47,4				255.37.51,87	30,296	61,8	57,8	233,10	114.6.17,39	B.
	(k) H. C. 34884.....	3.14,6	11,3	12,7	10,0	10,3	7,3				250.18.11,75				166,48	108.45.30,65	B.
	(k) H. C. 34889.....	...	...	...	...	...	...		4,672		250.20.2,89				166,76	108.47.22,07	B.
	H. C. 35076.....	...	...	...	...	...	...		1,473		250.21.9,62				166,93	108.48.28,97	B.
	(l) σ Sagittarii.....	4.17,1	11,8	15,4	11,7	10,5	8,6				257.59.13,47				280,64	116.28.26,53	B.
	H. C. 35459.....	0.65,9	62,5	62,6	61,5	61,3	58,6				249.6.2,30				156,01	107.33.10,73	B.
	(m) δ Cygni R.....	1.17,8	16,1	16,8	16,6	14,8	10,5		9,386	+1	351.56.28,38	30,301	60,4	55,3	7,63	45.13.22,83	B.
	δ Cygni.....	3.30,3	24,8	28,9	26,1	24,9	22,0		9,386	+2	186.48.40,34					45.13.20,39	B.
	(n) B. (w.) XXI. 239.....	2.57,4	51,9	53,4	52,3	50,4	48,6				245.12.52,98	30,302	58,3	52,7	130,20	103.39.35,60	B.
	(n) B. (w.) XXI. 418.....	1.24,0	20,2	19,9	20,9	17,8	18,1				244.16.20,45				124,73	102.42.57,60	B.
	(n) B. (w.) XXI. 570.....	2.66,7	62,3	63,6	61,6	60,4	58,9				245.38.2,93				132,76	104.4.48,11	B.
	(o) B. (w.) XXI. 592.....	...	...	...	...	...	...		7,383		245.38.57,52				132,86	104.5.42,80	B.
	Zenith Point.....	2.30,4	25,6	28,8	27,4	24,3	22,3		9,605		179.22.35,26						B.
	(p) Zenith Point.....	2.13,0	8,9	12,3	9,4	8,0	4,6		8,751		179.22.35,90						B.
Aug. 10	(q) ⊙ N.L.....	0.67,5	64,7	64,0	63,6	63,1	58,9		8,438		215.46.36,45	30,331	62,9	69,7	41,88	74.11.50,75	B.
	⊙ S.L.....	2.45,6	42,7	43,3	44,2	42,1	36,8		8,438		216.18.15,31				42,69	74.43.30,42	B.
	B.A.C. 6023.....	0.52,7	50,2	49,3	51,0	49,6	46,9				255.40.50,13	30,304	63,3	60,5	232,71	114.9.15,26	B.
	(r) A. (o.) 17422.....	3.66,9	61,4	65,3	62,1	62,3	58,2		12,149		257.18.18,79				263,72	115.47.14,93	B.
	H. C. 32848.....	...	...	...	...	...	...				257.19.3,62				263,99	115.48.0,03	B.
	H. C. 33102.....	2.29,8	25,5	27,4	26,1	25,5	22,9				253.12.26,75				196,68	111.40.15,85	B.
	(s) H. C. 33272.....	4.16,4	12,2	15,5	13,5	12,2	8,5				255.19.14,00			59,4	227,25	113.47.33,67	B.
	B.A.C. 6194.....	0.61,2	59,2	58,4	59,0	57,9	55,4				258.35.58,73				295,18	117.5.26,33	B.
	H. C. 33830.....	1.53,9	51,0	51,4	50,6	51,2	47,7				258.1.51,38	30,309	62,4	58,9	281,18	116.31.4,98	B.
	(t) α Lyræ R.....	4.16,4	11,5	16,4	14,2	14,5	8,4		10,324		345.49.7,76				13,99	51.20.49,81	B.
	α Lyræ.....	1.11,4	8,0	9,6	9,6	7,5	4,5		10,324		192.56.1,92					51.20.48,33	B.
	H. C. 35311.....	3.51,4	48,0	49,9	47,6	48,2	43,3				257.53.48,93	30,311	61,0	57,0	279,09	116.23.0,44	B.
	(u) H. C. 36128.....	1.59,0	57,4	57,4	56,4	57,1	52,6				250.26.57,10	30,311	60,8	56,2	168,47	108.54.17,99	B.
	(x) H. C. 36976.....	0.14,1	12,4	9,9	11,6	10,7	8,9				248.10.11,32				149,22	106.37.12,96	B.
	H. C. 37846.....	3.42,3	38,4	39,8	39,6	38,4	35,1				255.48.39,75				237,09	114.17.9,26	B.
	β Cephei R.....	0.16,4	13,0	12,8	13,9	10,6	8,1		12,149		17.4.27,69	30,301	58,2	53,5	18,72	20.4.57,17	B.
	β Cephei.....	1.33,2	30,0	31,8	28,6	28,9	24,0		12,149		161.40.44,92					20.4.58,62	B.
	π <sup>1</sup> Cygni R.....	1.29,4	24,6	27,1	24,8	22,5	21,2		11,106		357.41.2,18				1,73	39.28.43,13	B.
	(b) π <sup>1</sup> Cygni.....	4.33,1	29,8	30,4	31,5	28,2	27,3		11,106		181.4.6,86					39.28.41,01	B.
	B. (w.) XXI. 1038.....	4.60,0	56,8	56,1	57,1	54,9	55,1				246.9.57,78		53,1		136,02	104.36.46,22	B.
	B. (w.) XXI. 1060.....	...	...	...	...	...	...		10,431		246.9.48,79				136,01	104.36.37,22	B.
	(y) B.A.C. 7640.....	2.7,4	3,4	4,6	3,0	2,6	0,9				247.22.4,12				144,19	105.49.0,73	B.
	H. C. 42841.....	...	...	...	...	...	...		16,225		247.19.54,27				143,93	105.46.50,62	B.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Through cloud. (b) Negative correction for Runs. (c) 'One of Mag. 6 south-preceding.' (d) Very faint. (e) Great vibration.  
 (f) Faint from day-light. (g) 'Good.' (h) Times by Molyneux, 18<sup>h</sup>. 16<sup>m</sup>. 43<sup>s</sup>. 18<sup>m</sup>. 22<sup>s</sup>. 25<sup>m</sup>. 41<sup>s</sup>. and 26<sup>m</sup>. 38<sup>s</sup>. Molyneux fast on Hardy, 21<sup>s</sup>. (i) Misty.  
 (k) 'Differing little in R.A.' (l) Flaring. (m) Unsteady. (n) Much obscured by mist. (o) 'About 1<sup>m</sup> after the next preceding.' (p) The  
 trough reversed. (q) Great motion. (r) This designation means, No. 17422 of Oeltzen's reduction of Argelander's southern zones. The star was bisected  
 doubtfully, being very faint: it preceded the next by about 15". (s) 'A fainter of equal R.A. and less N.P.D. by about 1'.' (t) 'Steady and good.'  
 (u) 'One south-preceding and another south-following.' (x) 'One southward and another northward.' (y) 'This preceded the next more than 1<sup>m</sup>: several  
 others between them.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Aug.10	B. (w.) XXI. 1354 B. (w.) XXI. 87..	0. 64,3 0. 19,4	60,1 15,1	61,2 14,3	60,5 15,2	58,8 14,9	57,1 13,3	+6,8			246. 21. 0,57 238. 45. 15,42	30,301	58,2	53,1	137,22 98,84	104. 47. 50,21 97. 11. 26,68	B. B.
Aug.11	(a) ☉ S.L..... (b) ☉ N.L..... (c) H. C. 36591..... (d) H. C. 36961..... (e) e <sup>1</sup> Sagittarii..... (e) * R. 19 <sup>h</sup> . 32 <sup>m</sup> . 20 <sup>s</sup> ..... B.A.C. 6773..... ω Sagittarii..... α <sup>1</sup> Capricorni R... α <sup>1</sup> Capricorni..... α <sup>2</sup> Capricorni R... α <sup>2</sup> Capricorni..... B. (w.) xx. 932.. (f) H. C. 40125..... (f) B.A.C. 7202..... (g) H. C. 40386..... (h) H. C. 40622..... (b) Neptune .....	1. 16,4 4. 35,3 1. 66,8 3. 19,9 0. 29,4 ... 1. 6,8 1. 45,0 3. 20,0 1. 58,5 3. 20,0 1. 58,5 2. 14,4 1. 55,5 ... 0. 38,6 0. 29,6 4. 64,0	14,1 32,1 63,8 16,0 26,8 ... 3,1 41,8 16,9 54,5 16,9 54,5 11,1 53,0 ... 36,8 26,9 59,3	13,2 30,9 62,5 16,2 24,1 ... 2,8 40,8 18,6 54,9 18,6 54,9 11,3 52,6 ... 35,6 25,2 58,2	12,7 30,9 62,9 14,1 24,8 ... 2,5 39,6 15,3 53,3 15,3 53,3 10,5 51,9 ... 34,7 25,9 58,2	10,6 28,6 61,4 13,4 24,2 ... 1,9 39,2 13,4 55,2 13,4 55,2 9,3 51,6 ... 34,2 25,4 57,4	6,9 27,4 58,8 11,1 22,8 ... 0,1 36,8 10,4 51,6 10,4 51,6 7,5 47,8 ... 32,3 22,8 56,7		10,534 10,534 10,534   11,614   6,811 13,302 13,302 6,846  10,331  <								

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6. ASSUMED CO-LATITUDE = 37°.47'.8",00.

Aug. 22. The Circle was taken from the wall and its axis cleaned, and immediately after the microscopes were adjusted. Aug. 23, 11<sup>h</sup>, the equatorial adjustment of the micrometer-wire was verified by a large number of stars.

(a) Great motion. (b) Negative correction for Runs. (c) Mist: the sky clearing. (d) Very faint. 'Two of equal magnitude south-following.'  
 (e) 'Coarsely double.' The second follows by about 2". (f) B.A.C. 7202 precedes about 1". (g) Very faint from mist. (h) Misty cloud: bisection doubtful.  
 (i) Bad image, but the mercury steady. (k) 'Coarsely double, the preceding that of less N.P.D.' (l) 'Follows two near each other.'  
 (m) Without the dark glass: the sky overcast. (n) The observer suspected that this micrometer reading was written by mistake for 6,533. (o) Very faint from cloud.  
 (p) Between these the mercury trough was reversed and the Circle moved. (q) Unsteady. (r) 'Not good: the mercury waving.'  
 (s) Perplexing observation: the dark glass not used. (t) Faint. The evening was generally cloudy. (u) Taken by the reflection of day-light: the image was too far from the middle of the field.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	"					
Aug. 23	B.A.C. 6273.....	1. 30,7	29,2	31,1	30,0	31,8	33,7	+5,6			256. 51. 31,37	29,758	60,6	56,3	252,22	115. 20. 45,05		B.	
	(a) α Lyrae R. ....	4. 10,2	5,1	13,1	9,3	10,9	11,4		11,403		345. 48. 41,51				13,81	51. 20. 46,84		B.	
	α Lyrae .....	0. 57,7	57,6	60,8	58,1	61,6	58,9		11,403	+ $\frac{3}{4}$	192. 55. 30,10					51. 20. 45,37		B.	
Aug. 24	(b) ☉ N.L. ....	0. 4,6	3,9	5,2	4,6	5,9	5,4		12,023	+2 $\frac{1}{2}$	220. 14. 22,33	29,781	60,8	64,1	48,80	78. 40. 12,59		B.	
	☉ S.L. ....	1. 44,6	43,4	47,1	44,1	48,5	44,5		12,023	+2 $\frac{1}{2}$	220. 46. 3,67				49,71	79. 11. 54,24		B.	
	(c) ρ Draconis R. ....	2. 25,9	22,1	28,3	24,4	23,4	26,3		12,748		14. 36. 28,20	29,739	59,6	54,5	15,65	22. 32. 30,69		B.	
	ρ Draconis .....	3. 38,6	36,9	44,1	39,3	40,0	38,6		12,748	+2	164. 7. 44,40					22. 32. 30,21		B.	
	κ Cephei R. ....	1. 12,6	10,6	14,8	11,6	11,9	14,3		13,556	- $\frac{1}{4}$	24. 24. 58,63				26,84	12. 43. 49,07		B.	
	κ Cephei .....	0. 27,4	26,6	29,1	26,2	28,2	29,4		13,556	+1	154. 19. 14,39					12. 43. 49,01		B.	
	(d) ε Aquarii R. ....	0. 19,1	16,4	17,8	16,5	14,8	18,8		12,688		297. 9. 21,21	29,747	58,1	53,2	108,89	100. 1. 42,22		B.	
	ε Aquarii .....	0. 46,0	42,3	46,5	44,1	46,7	48,4		12,688	+2 $\frac{1}{2}$	241. 34. 49,58					100. 1. 39,93		B.	
Aug. 25	☉ S.L. ....	3. 8,4	4,1	12,0	6,8	8,1	8,1		14,036		221. 6. 44,31	29,691	60,6	65,9	49,99	79. 32. 35,76		B.	
	☉ N.L. ....	1. 27,8	25,3	29,4	28,2	29,5	29,9		14,036	+2	220. 35. 4,06				49,07	79. 0. 54,59		B.	
Aug. 26	(e) ☉ N.L. ....	0. 23,9	21,6	24,7	25,8	25,6	25,9		8,713	+2	220. 55. 51,15	29,214	61,4	64,6	49,00	79. 21. 41,61		B.	
	☉ S.L. ....	2. 6,4	3,8	8,6	7,7	7,6	7,7		8,713	+2 $\frac{3}{4}$	221. 27. 33,74				49,92	79. 53. 25,12		B.	
Aug. 27	(f) B. (w.) XXII. 752.	3. 14,2	8,2	16,6	11,1	13,0	15,7				241. 28. 13,73	29,465	55,5	52,7	107,47	99. 55. 2,66		B.	
	(g) B. (w.) XXII. 889.	1. 27,3	23,4	28,8	24,8	25,8	30,1				234. 41. 26,97				82,38	93. 7. 50,81		B.	
	B. (w.) XXII. 987.	2. 19,2	14,3	21,6	16,7	19,4	21,2				239. 52. 19,17				100,63	98. 19. 1,26		B.	
	B. (w.) XXII. 1109	3. 38,6	33,5	40,9	35,3	39,1	40,2				236. 53. 38,62				89,52	95. 20. 9,60		B.	
	Neptune .....	4. 21,2	15,0	24,4	19,4	21,1	22,6				239. 19. 21,43	29,469	55,4	52,3	98,53	97. 46. 1,42		B.	
Sept. 22	(h) ☉ S.L. ....	0. 4,3	5,3	2,8	4,9	4,0	11,3	+8,1	11,370		231. 34. 16,28	29,758	61,5	64,0	72,59	90. 0. 46,41		T.	
	☉ N.L. ....	3. 8,9	6,7	9,2	10,1	7,9	11,4		11,370		231. 2. 20,44				71,22	89. 28. 49,20		T.	
	(i) η Lyrae R. ....	4. 28,2	23,3	32,9	28,9	28,1	29,3		12,689		346. 3. 12,72	29,732	60,1	59,6	13,45	51. 5. 59,19		T.	
	(k) ρ <sup>1</sup> Sagittarii .....	0. 15,9	14,0	15,1	15,9	14,8	18,3		11,997	+2 $\frac{1}{2}$	249. 39. 12,92				157,22	108. 7. 7,68		T.	
	H. C. 37873 .....	2. 15,1	11,9	16,8	13,1	14,9	18,1				251. 12. 15,58	29,740	59,7	58,7	171,78	109. 40. 24,90		T.	
	H. C. 38161 .....	4. 9,7	5,0	11,7	7,1	8,0	10,0				249. 29. 9,70				156,14	107. 57. 3,38		T.	
	(l) H. C. 38339 .....	3. 61,0	56,1	63,0	59,9	60,4	62,1				250. 39. 1,50				166,45	109. 7. 5,49		T.	
	32 Cygni R. ....	1. 40,0	38,0	43,0	40,4	41,5	42,9		13,083	-1	354. 25. 16,09				4,93	42. 43. 47,30		T.	
	(m) 32 Cygni .....	4. 47,6	49,7	49,7	50,3	51,7	50,2		13,083	+ $\frac{1}{4}$	184. 18. 24,69					42. 43. 47,16		T.	
	θ Cephei R. ....	0. 7,0	5,0	8,9	7,4	7,7	10,2		11,687	+1	9. 39. 11,40	29,730		57,8	10,36	27. 29. 36,70		T.	
	θ Cephei .....	0. 22,0	21,3	24,9	24,1	24,7	24,0		11,687	+2 $\frac{1}{2}$	169. 4. 29,36					27. 29. 36,54		T.	
	(n) α Cygni R. ....	0. 13,8	11,1	14,9	13,7	13,0	16,7		10,100		351. 54. 50,98				7,46	45. 14. 14,94		T.	
	(m)(n) α Cygni .....	4. 9,9	11,1	11,0	12,1	14,0	12,3		10,100	+1 $\frac{1}{2}$	186. 48. 48,89					45. 14. 13,89		T.	
	(o) α Cygni .....	...	...	...	...	...	...		10,113	+3	186. 48. 49,62					45. 14. 14,62		T.	
Sept. 23	(p) ☉ N.L. ....	1. 32,4	29,9	30,9	31,8	32,0	34,9		11,449		231. 25. 41,32	29,712	58,5	58,6	72,90	89. 52. 11,76		T.	
	☉ S.L. ....	3. 28,0	25,6	29,3	28,3	28,3	30,0		11,449		231. 57. 38,10				74,30	90. 24. 9,94		T.	
	Zenith Point .....	2. 45,8	42,8	49,1	45,4	47,7	47,3		11,719		179. 21. 50,38							T.	
	Zenith Point ....	1. 60,8	58,7	63,3	60,6	62,0	63,7		9,552		179. 21. 50,54							T.	
	H. C. 38398 .....	1. 10,0	5,2	10,1	6,9	8,1	13,7				251. 31. 9,32	29,684	50,7	48,8	178,21	109. 59. 25,07		T.	
	B.A.C. 6953 .....	1. 29,9	24,7	30,0	25,9	27,3	31,9				248. 16. 28,68				149,29	106. 44. 15,51		T.	
	B.A.C. 6982 .....	0. 58,8	53,7	59,3	55,2	57,5	61,2				257. 10. 57,43				262,36	115. 40. 37,33		T.	
	H. C. 38974 .....	...	...	...	...	...	...		10,761	+2 $\frac{1}{2}$	257. 10. 20,99				262,14	115. 40. 0,67		T.	
	B.A.C. 7016 .....	2. 22,0	16,4	23,5	18,2	18,7	23,2			+1 $\frac{1}{2}$	246. 7. 20,88				134,25	104. 34. 52,67		T.	
	B. (w.) xx. 419 .....	...	...	...	...	...	...		6,597	+1 $\frac{1}{2}$	246. 8. 11,01				134,34	104. 35. 42,89		T.	
	H. C. 39419 .....	3. 16,3	10,4	18,9	12,1	13,7	16,9			+1 $\frac{1}{2}$	252. 43. 15,47	29,684	50,7	48,5	191,72	111. 11. 44,73		T.	
	B.A.C. 7102 .....	1. 51,9	46,1	52,0	49,0	49,7	52,1				252. 36. 50,63				190,45	111. 5. 18,62		T.	
	H. C. 39688 .....	...	...	...	...	...	...		12,273		252. 35. 42,36				190,23	111. 4. 10,13		T.	
	(m) α Cygni R. ....	4. 23,2	21,9	24,0	24,1	22,7	26,1		7,773	+1 $\frac{1}{4}$	351. 54. 49,08				7,59	45. 14. 16,97		T.	
	α Cygni .....	3. 21,1	18,5	25,7	21,7	21,1	23,0		7,773	+2 $\frac{1}{4}$	186. 48. 49,09					45. 14. 14,22		T.	
	57 Cygni R. ....	0. 47,6	44,9	48,9	47,1	47,9	49,5		12,959	+ $\frac{1}{2}$	350. 59. 25,25				8,55	46. 9. 41,76		T.	
	57 Cygni .....	0. 38,9	37,9	41,0	37,9	39,2	40,9		12,959	+1	187. 44. 17,05					46. 9. 43,14		T.	
	(m) B. (w.) xx. 1450.	4. 48,4	43,9	47,0	45,1	46,4	50,4				246. 39. 46,80	29,680	50,9	48,3	137,89	105. 7. 22,23		T.	
	B. (w.) XXI. 28 .....	1. 42,5	37,0	43,9	38,7	40,3	44,4				246. 11. 41,58				134,83	104. 39. 13,95		T.	

ONE REV. of the MICROM. = 20".359. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6. ASSUMED CO-LATITUDE = 37°. 47'. 8".10. Aug. 29, the eye-piece was removed for the insertion of a moveable dark bar and apparatus for adjusting the distance of the wires from the object-glass. See the Introduction. Sept. 21, 11h, after restoring the eye-piece, the distance of the wires from the object-glass was adjusted by the new apparatus, and the micrometer-wire was adjusted equatorially.

(a) Blazing. (b) Delay caused by the difficulty of observing either with or without the dark glass, the Sun being partially obscured by misty cloud. (c) Very steady: clouds passing. (d) Unsteady: the wind strong from the South. (e) Unsteady: after heavy rain, and the wind high. (f) Observed for H. C. 44375. See the Catalogue of N.P.D. (g) Bisected doubtfully, being very faint from cloud. (h) N. B. From this date the reference micrometer reading is 97,000. The micrometer reading for the position of the fixed wire is about 107,000. See the Introduction. (i) The mercury agitated by wind. The direct observation lost by the shutter being fast. (k) Clouded: seen only at this time. (l) A very faint star: bisected doubtfully. (m) Negative correction for Runs. (n) Very close to the fixed wire. (o) The observer being doubtful which was the bisecting wire, moved the micrometer-wire and made another bisection, which was considered good. (p) Limbs scarcely traceable on account of cloud.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	"		"	"	"	
Sept. 23	B. (w.) XXI. 52	1.42,5	37,0	43,9	38,7	40,3	44,4	+8,1	11,025		246.10.59,34	29,680	50,9	48,3	134,75	104.38.31,63	T.		
	B. (w.) XXI. 164	2.43,7	37,9	45,1	40,4	41,5	45,9				245.42.43,15				131,73	104.10.12,47	T.		
	B. (w.) XXI. 383	1.45,0	40,0	45,0	41,6	41,9	46,6				246.31.43,82				137,00	104.59.18,36	T.		
	B. (w.) XXI. 392	...	...	...	...	...	...		23,401		246.26.43,43				136,46	104.54.17,43	T.		
	$\beta$ Cephei R.	0.27,0	25,0	27,9	25,3	25,0	29,1		13,269	- $\frac{3}{4}$	17.3.57,39				18,53	20.4.42,54	T.		
	$\beta$ Cephei	1.16,5	14,7	18,9	15,7	15,9	17,4		13,269	- $\frac{3}{4}$	161.39.47,82					20.4.46,83	T.		
	(a) Neptune	0.58,2	53,9	58,5	55,9	56,8	61,1				239.35.57,93	29,662	49,0	46,4	101,52	98.2.56,99	T.		
	$\alpha$ Andromedæ R.	1.58,0	54,1	60,3	56,8	57,0	58,4		10,664	- $\frac{3}{4}$	335.26.23,21	29,656	47,9	45,4	25,89	61.43.1,14	T.		
	$\alpha$ Andromedæ	2.51,2	46,7	53,1	49,9	50,9	50,6		10,664	+1 $\frac{1}{2}$	203.17.16,64					61.43.0,07	T.		
	$\kappa$ Cassiopeia R.	2.26,0	23,0	28,3	25,1	24,4	26,2		12,616		9.16.10,74				10,19	27.52.37,53	T.		
	$\kappa$ Cassiopeia	3.45,7	41,3	50,1	44,2	45,6	45,5		12,616	+1 $\frac{1}{4}$	169.27.31,41					27.52.38,76	T.		
	$\alpha$ Cassiopeia R.	4.46,7	42,7	52,1	45,7	46,7	47,3		14,362		2.52.56,30				3,59	34.15.58,37	T.		
	$\alpha$ Cassiopeia	2.36,3	33,0	40,2	36,4	35,9	36,2		14,362	+1 $\frac{1}{2}$	175.50.45,67					34.15.59,62	T.		
	(b) Polaris R.	1.53,5	52,0	56,1	51,6	53,5	56,7		14,808		35.39.53,22	29,648	49,8	44,4	42,93	1.28.22,31	T.		
	(b) Polaris R.	...	...	...	...	...	...		14,801		35.39.53,29					1.28.22,24	T.		
	(b) Polaris	3.39,7	35,1	43,5	35,8	37,8	40,4		8,633		143.3.47,94					1.28.22,55	T.		
	(b) Polaris	...	...	...	...	...	...		8,666		143.3.47,68					1.28.22,29	T.		
Sept. 24	(c) $\odot$ N.L.	3.62,2	56,1	62,3	61,7	63,0	63,5	+8,8		-2	231.49.3,19	29,676	55,0	56,0	74,22	90.15.34,98	C.		
	(d) B.A.C. 7651 R.	1.52,2	47,1	56,3	52,6	53,5	55,4		14,635	+2 $\frac{1}{2}$	7.59.54,18	29,700	49,5	42,6	8,93	29.8.55,32	C.		
	B.A.C. 7651	0.40,1	35,0	43,4	40,8	40,1	36,6		14,635	+5	170.43.48,07					29.8.56,71	C.		
	Zenith Point	2.26,0	19,4	29,9	25,2	25,3	27,1		10,714		179.21.50,43							C.	
	Neptune	1.30,0	24,4	31,0	29,3	30,0	33,8				239.36.30,18	29,700	49,2	41,4	102,74	98.3.30,49	C.		
	(e) Thetis B.	2.20,2	13,6	21,3	19,4	18,4	24,7		5,876	+2 $\frac{3}{4}$	244.13.23,52				124,95	102.40.46,04	C.		
Sept. 26	$\odot$ N.L.	1.53,3	50,7	55,1	53,2	54,6	56,4		11,904		232.35.53,86	29,604	52,6	55,0	76,31	91.2.27,74	C.		
	(f) $\odot$ S.L.	3.49,7	44,0	52,8	47,6	51,5	51,6		11,904		233.7.50,08				79,62	91.34.27,27	C.		
Sept. 30	(g) $\odot$ S.L.	0.48,0	46,7	48,5	48,0	50,2	51,7	+8,7	7,599		234.41.18,30	29,948	56,5	56,6	83,07	93.7.58,63	T.		
	$\odot$ N.L.	3.50,7	45,9	52,0	47,6	50,9	50,7		7,599		234.9.19,97				81,45	92.35.58,68	T.		
	(h) $\gamma$ Aquilæ R.	0.26,3	23,2	26,5	25,9	24,9	30,8		9,059		317.25.25,17	29,920	51,2	46,8	52,71	79.44.26,28	T.		
	$\gamma$ Aquilæ	3.6,5	2,9	8,1	5,7	8,1	8,3		9,059	+2	221.18.6,38					79.44.16,35	T.		
	(h) $\beta$ Aquilæ R.	2.26,3	21,8	29,3	24,3	26,7	27,6		8,459		313.12.38,01				61,06	83.57.21,79	T.		
	$\beta$ Aquilæ	0.42,3	39,9	41,9	40,4	43,1	45,8		8,459	+2 $\frac{1}{4}$	225.30.53,80					83.57.12,12	T.		
	$\alpha$ Cephei R.	2.11,2	7,1	14,3	11,9	9,5	15,3		9,587		9.6.59,93	29,894	47,2	45,1	10,12	28.1.48,69	T.		
	(i) $\alpha$ Cephei	1.52,7	46,0	56,3	50,1	52,7	54,9		9,587	+1 $\frac{3}{4}$	169.36.41,29					28.1.48,43	T.		
	(i) $\alpha$ Cephei	...	...	...	...	...	...		9,700	+2 $\frac{1}{2}$	169.36.39,84					28.1.46,98	T.		
	(k) $\gamma$ Aquilæ R.	1.25,7	21,9	28,3	24,1	25,0	28,0		11,648		317.25.30,69	29,584	49,6	47,4	52,06	79.44.20,11	T.		
Oct. 1	(l) $\gamma$ Aquilæ	3.61,1	59,9	61,1	60,0	62,7	66,5		11,648	+2	221.18.6,48					79.44.15,80	T.		
	(m) $\beta$ Aquilæ R.	3.9,5	4,6	13,0	8,3	8,7	10,7		10,309	+2	313.12.42,68				60,30	83.57.16,36	T.		
	$\beta$ Aquilæ	1.22,7	18,2	25,0	19,5	22,2	24,7		10,309	+4 $\frac{1}{2}$	225.30.55,13					83.57.12,69	T.		
	* $\mathcal{R}$ 20 <sup>h</sup> . 1 <sup>m</sup> . 39 <sup>s</sup> R.	4.22,9	18,7	29,1	22,2	24,5	25,1		10,941	+1 $\frac{1}{2}$	343.33.44,28				16,41	53.35.30,87	T.		
	* $\mathcal{R}$ 20 <sup>h</sup> . 1 <sup>m</sup> . 39 <sup>s</sup>	0.30,8	25,7	32,9	28,1	29,8	33,0		10,941	+3	195.9.50,71					53.35.24,38	T.		
	(l)(o) $\Delta$ Delphini R.	4.50,3	47,8	52,1	48,8	51,8	53,1		12,218		322.33.43,47	29,585	48,9	47,1	43,39	74.35.58,66	T.		
	32 Vulpeculæ R.	1.49,6	45,7	52,4	48,3	51,6	51,8		14,928		334.39.46,78				26,69	62.29.38,65	T.		
	32 Vulpeculæ	0.55,4	50,9	57,9	54,5	55,1	57,1		14,928	+1 $\frac{1}{4}$	204.3.51,89					62.29.35,84	T.		
	(p) H. C. 40861	0.38,0	33,2	38,2	34,2	37,4	41,1				248.5.37,20				147,92	106.33.22,38	T.		
	B. (w.) XXI. 222	0.12,0	7,9	12,9	10,0	11,0	15,9				244.25.11,67	29,590	48,6	46,3	124,31	102.52.33,24	T.		
	B. (w.) XXI. 378	2.27,5	22,5	30,8	25,0	27,5	31,0				243.7.28,07				117,38	101.34.42,71	T.		
	(l)(q) $\beta$ Cephei R.	4.56,3	54,7	58,7	55,9	57,9	60,3		11,631		17.4.2,40				18,55	20.4.37,79	T.		
	$\beta$ Cephei	0.36,9	33,5	40,1	35,8	36,8	40,5		11,631	+1 $\frac{1}{2}$	161.39.43,50					20.4.42,21	T.		
	$\nu$ Cephei R.	1.18,6	16,1	22,7	18,7	19,9	22,6		10,469		7.35.49,51				8,41	29.33.0,82	T.		
	$\nu$ Cephei	3.21,0	15,9	27,5	20,1	21,9	23,3		10,469	+1 $\frac{1}{2}$	171.7.52,54					29.33.1,39	T.		
	Neptune	0.25,2	19,6	26,6	21,9	24,2	29,1				239.40.24,55	29,594	46,4	43,7	102,16	98.7.23,97	T.		
	$\sigma$ Cephei R.	3.56,4	53,0	64,1	57,5	58,7	58,2		13,351		14.27.28,37				15,76	22.41.14,61	T.		
	$\sigma$ Cephei	2.43,1	38,1	48,3	40,5	42,9	45,7		13,351		164.16.13,12					22.41.14,62	T.		
	$\lambda$ Andromedæ R.	0.35,0	32,1	40,0	34,4	36,7	38,0		13,241		352.49.7,76		43,4	6,71		44.19.57,69	T.		
	$\lambda$ Andromedæ	0.61,9	57,1	64,5	60,3	61,3	64,6		13,241		185.54.33,46					44.19.57,43	T.		

ONE REVOLUTION of the MICROMETER = 20".859.  
 ASSUMED CO-LATITUDE = 37°.47'.8".00.

ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.

(a) The recorded circle reading was 1' greater. (b) Times by Molyneux, 1<sup>h</sup>. 3<sup>m</sup>. 4<sup>s</sup>, 5<sup>m</sup>. 38<sup>s</sup>, 7<sup>m</sup>. 28<sup>s</sup>, and 8<sup>m</sup>. 32<sup>s</sup>. Molyneux slow on Hardy, 61".  
 (c) Without the dark glass. S.L. lost by wrong setting. (d) A south wind blowing disturbed the air in the Room, and delayed the observation. (e) The letter B indicates that the object was bisected by the moveable dark bar: mist on the eye-piece prevented bisection with the wire. The recorded reading has been increased 1' conjecturally. The reduction to the wire-reading = +0".059. For an account of the mode of obtaining this correction see the Introduction.  
 (f) Bisection rapidly and doubtfully on account of cloud. (g) Clouded and unsteady. (h) Bad images, the mercury being much disturbed by a south wind. These observations are very discordant. (i) Two bisections for greater certainty. (k) Bad image from high wind. (l) Negative correction for Runs.  
 (m) 'Not good: the mercury disturbed.' (n) 'Observed by mistake for  $\beta$  Cygni, which it precedes about 1<sup>m</sup>: good observation.' (o) The direct observation lost by the shutter not opening. (p) 'One north-preceding.' (q) Disturbed mercury.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Oct. 1	ψ Andromedæ R ψ Andromedæ ..	1.33,4 3.55,2	30,9 48,7	38,9 58,9	33,1 53,4	34,0 54,0	36,5 55,7	+8,7	11,676 11,676		352.45.39,11 185.57.59,63	29,594	46,4 43,4	43,4	6,77	44.23.26,40 44.23.23,66	T. T.
Oct. 3	(a) ☉ N.L..... ☉ S.L..... (b) Polaris SP..... (b) Polaris SP..... (b) Polaris SP..... Zenith Point..... τ Aquilæ R. .... τ Aquilæ..... (c) α <sup>1</sup> Capricorni R.. α <sup>1</sup> Capricorni .... α <sup>2</sup> Capricorni .... (d) H. C. 39318..... (e) A (o) 20587..... α Delphini R. .... α Delphini .....	3.65,3 1.7,0 1.48,9 ..... ..... 1.57,9 2.45,8 2.4,9 1.52,0 3.11,3 ..... 1.9,7 1.38,4 4.12,8 0.23,1 3.19,0 2.20,6 4.62,4 1.42,0 3.34,0 1.58,0 1.62,0 0.3,9 ..... ..... 0.55,0 3.43,2 ..... 0.57,6 1.25,2 0.44,7 0.41,4 1.38,9 ..... ..... ..... 3.26,4 .....															

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) The recorded micrometer reading was 1' greater. (b) Times by Molyneux, 13<sup>h</sup>.12<sup>m</sup>.56<sup>s</sup>, 15<sup>m</sup>.44<sup>s</sup>, 17<sup>m</sup>.44<sup>s</sup>. Molyneux slow on Hardy, 2<sup>m</sup>.15<sup>s</sup>, by a comparison on Oct. 3, 13<sup>h</sup>. (c) 'Not good: too unsteady.' (d) The recorded circle reading was 1' less. See the Catalogue of N.P.D. (e) Taken for H. C. 39499 through a mistake in the working Catalogue. (f) Negative correction for Runs. (g) 'Follows the preceding 40 or 50 seconds.' (h) Bisected doubtfully, being very faint. (i) Times by Molyneux, 0<sup>h</sup>.57<sup>m</sup>.58<sup>s</sup>, 1<sup>h</sup>.0<sup>m</sup>.16<sup>s</sup>, 5<sup>m</sup>.1<sup>s</sup>, 6<sup>m</sup>.50<sup>s</sup>, 9<sup>m</sup>.9<sup>s</sup>, 10<sup>m</sup>.21<sup>s</sup>, 11<sup>m</sup>.18<sup>s</sup> and 12<sup>m</sup>.18<sup>s</sup>. Molyneux slow on Hardy, 2<sup>m</sup>.16<sup>s</sup>. (k) The mercury disturbed. (l) Steady. (m) Very unsteady and ill-defined. (n) 'Very good.' (o) Satisfactory bisection. (p) 'Nothing else seen.' See the Catalogue of N.P.D. (q) Very faint: a foggy sky. (r) Thick fog.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for S.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		°	'	"	
Oct. 7	(a) α Aquarii R. ....	0.41,7	39,5	45,0	41,9	44,3	45,8	+8,7	15,191		306. 8.34,11	29,436	48,1	45,0	77,41	91. 1.42,04			T.
	α Aquarii. ....	2.12,9	9,9	17,6	12,0	14,1	17,3		15,191		232.35. 5,58					91. 1.40,15			T.
Oct. 12	⊙ S.L. ....	1.13,0	12,9	16,3	14,1	15,1	19,6	+5,8	5,381		239.17.30,91	29,686	54,0	55,6	98,49	97.44.28,01			T.
	⊙ N.L. ....	4. 8,4	4,1	13,1	8,4	10,0	12,0		5,381		238.45.25,62				96,41	97.12.20,64			T.
Oct. 13	⊙ N.L. ....	2.52,9	51,0	55,6	53,1	54,3	57,2		9,017		239. 7.54,21	29,728	54,6	58,3	97,46	97.34.50,28			T.
	(b) ⊙ S.L. ....	4.58,5	57,8	59,6	58,0	60,0	63,6		9,017		239.39.59,22				99,57	98. 6.57,40			T.
	Zenith Point. ....	1.59,5	57,6	63,9	60,7	60,8	62,0		9,563		179.21.49,39								T.
Oct. 14	⊙ S.L. ....	1.54,9	52,9	57,8	55,2	58,0	58,9		7,916		240. 2.19,28	29,708	55,0	57,1	101,25	98.29.19,14			T.
	(b) ⊙ N.L. ....	4.51,0	51,8	53,9	53,1	55,0	57,0		7,916		239.30.16,23				99,09	97.57.13,93			T.
Oct. 15	⊙ N.L. ....	1.14,0	12,7	14,6	14,7	15,9	18,7	+8,4	5,286		239.52.32,92	29,562	54,1	56,4	100,24	98.19.31,66			T.
	⊙ S.L. ....	3.18,3	16,2	22,1	19,3	19,9	22,9		5,286		240.24.38,19				102,44	98.51.39,13			T.
Oct. 17	Zenith Point. ....	1.62,2	59,6	67,5	62,3	63,1	64,4		9,683		179.21.49,50								T.
	(c) Polaris SP. R. ....	3.37,5	34,7	42,2	37,6	38,6	41,7		15,378		38.36.27,12	29,402	49,5	50,0	46,80	-1.28.16,42			T.
	(c) Polaris SP. R. ....	...	...	...	...	...	...		15,345		38.36.27,58					-1.28.16,88			T.
	(c) Polaris SP. ....	2.11,5	6,8	12,5	10,2	8,3	12,3		8,918		140. 7.12,24					-1.28.16,06			T.
	(c) Polaris SP. ....	...	...	...	...	...	...		8,902		140. 7.12,31					-1.28.15,99			T.
	(c) Polaris SP. R. ....	2.41,1	39,2	45,7	41,2	42,0	44,9		12,808		38.26.27,75					-1.28.17,05			T.
	(c) Polaris SP. ....	1.54,0	49,7	56,3	52,7	52,1	56,3		7,759		140. 7.12,40					-1.28.15,90			T.
Oct. 18	(b) ⊙ N.L. ....	4.11,2	10,2	12,0	10,1	10,4	17,0		10,944		240.58.31,03	29,402	49,6	50,2	105,61	99.25.35,14			T.
	⊙ S.L. ....	1.18,9	19,0	22,1	19,2	19,3	24,7		10,944		241.30.40,35				107,99	99.57.46,84			T.
	ε Cygni R. ....	0.21,9	23,0	25,1	22,1	22,7	27,1		10,290	+1½	340.34.56,62	29,424	46,8	43,0	19,79	56.34.20,67			T.
	(b) ε Cygni. ....	4. 5,1	7,0	6,2	6,8	6,0	10,0		10,290	+4	198. 8.41,27					56.34.19,56			T.
	B.A.C. 7263. ....	2.44,3	45,0	48,3	44,1	46,4	49,1				248. 7.46,98				148,66	106.35.34,14			T.
	B. (w.) xx. 1465. ....	1.30,1	29,3	32,9	28,9	29,7	33,8				247. 1.31,20				140,68	105.29.10,38			T.
	δ Equulei R. ....	0.55,0	54,7	56,4	53,9	55,0	58,7		11,825		316.34.56,95	29,436	46,0	42,2	53,92	80.34.54,47			T.
	δ Equulei. ....	4.40,2	41,2	42,2	40,3	41,2	46,9		11,825	+2	222. 8.43,09					80.34.55,51			T.
	(b)(d) B. (w.) xxi. 295. ....	3.43,8	44,4	45,0	42,3	45,2	48,9		9,015		244.28.44,27				125,07	102.56. 7,84			T.
	(b) β Aquarii R. ....	3.28,7	30,0	29,0	27,4	27,7	32,5		11,025		300.57.46,56				94,52	96.12.45,46			T.
	(c) β Aquarii. ....	1.31,5	31,7	34,4	30,8	31,4	35,9		11,025	+3	237.45.50,67					96.12.43,69			T.
	H. C. 42219. ....	1. 4,8	4,1	7,2	3,1	5,5	10,4				241.21. 6,15				109,19	99.48.13,84			T.
	H. C. 42937. ....	1.56,0	54,3	58,9	53,4	56,9	60,0				241.31.57,13	29,426	45,7	41,2	110,16	99.59. 5,79			T.
	* R. 22 <sup>b</sup> . 0 <sup>m</sup> . 10 <sup>s</sup> . ....	1.53,4	52,1	57,7	51,8	55,0	57,1				239.36.55,05				101,88	98. 3.55,43			T.
	(b) B. (w.) xxi. 87. ....	4.27,5	29,1	29,9	27,2	29,2	35,9				238.44.29,65				98,38	97.11.26,53			T.
	(b)(f) B. (w.) xxi. 213. ....	4.32,0	33,0	34,0	30,5	33,3	38,1		9,050		241.29.32,31				110,03	99.56.40,84			T.
	(b) B. (w.) xxi. 336. ....	3.55,8	56,9	56,9	54,0	56,9	61,1				242.28.56,63				114,67	100.56. 9,80			T.
	τ <sup>1</sup> Aquarii. ....	1.58,7	58,0	63,0	58,5	58,9	62,5				246.22. 0,50	29,416	45,5	40,7	136,89	140.49.35,89			T.
	Neptune. ....	3.20,0	19,0	25,0	19,6	20,4	23,2				239.48.22,13				102,73	98.15.23,36			T.
	(g) h <sup>1</sup> Aquarii. ....	2.58,3	57,0	62,3	57,3	59,7	62,2		12,125		240. 1.55,12				103,68	98.28.57,30			T.
	(g) h <sup>2</sup> Aquarii. ....	...	...	...	...	...	...		1,721		240. 5.32,13				103,93	98.32.34,56			T.
Oct. 20	⊙ S.L. ....	3.30,4	27,9	33,4	28,2	29,8	32,1		7,792		242.13.56,48	29,486	51,0	52,7	111,08	100.41. 6,06			T.
	⊙ N.L. ....	1.22,8	21,9	24,9	22,9	23,3	28,1		7,792		241.41.49,57				108,59	100. 8.56,66			T.
	H. C. 39425. ....	4.17,3	14,7	22,1	16,1	18,9	21,1				248.34.19,57	29,728	47,9	45,6	152,81	107. 2.10,88			T.
	B.A.C. 7097. ....	...	...	...	...	...	...		10,846		248.33.41,06				152,73	107. 1.32,29			T.
	α Delphini R. ....	4.40,9	39,0	47,1	39,8	42,4	43,7		11,849		322.33.44,04				43,73	74.35.57,19			T.
	(h) α Delphini. ....	0.15,5	16,0	17,1	14,8	16,9	20,8		10,030		216. 9.55,44					74.35.57,67			T.
	H. C. 40256. ....	3. 1,6	0,6	5,7	0,3	1,2	6,1				253.18. 3,43				200,35	111.46.42,28			T.
	(b) H. C. 40410. ....	4.60,6	61,1	63,0	59,4	61,9	65,7				249.20. 1,95				159,04	107.47.59,49			T.
	(b)(i) B. (w.) xx. 1366. ....	4.20,2	21,6	21,0	18,6	20,1	26,5		9,025		246.49.20,63				139,98	105.16.59,11			T.
	(b)(i) H. C. 40850. ....	4.53,9	54,0	55,1	52,7	55,0	59,5		9,048		244. 4.54,02				123,19	102.32.15,71			T.
	(b) Neptune. ....	4. 8,0	7,6	8,7	5,9	7,9	14,2		9,040		239.49. 7,65	29,764	45,0	42,9	103,52	98.16. 9,67			T.
	(b) α Pegasi. ....	3.41,4	41,1	40,1	38,3	40,9	45,3				217. 8.40,82				45,62	75.34.44,94			T.
	(k) Metis. ....	2.32,8	30,4	35,8	29,4	32,7	36,8		8,970		233.32.34,33	29,798	42,9	40,6	81,89	91.59.14,72			T.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) The star was very faint, and immediately after the observation the sky was quite overcast: the observer thought that the edge of the mercury trough intercepted some light. (b) Negative correction for Runs. (c) Times by Molyneux, 13<sup>h</sup>.0<sup>m</sup>.1<sup>s</sup>, 0<sup>m</sup>.53<sup>s</sup>, 5<sup>m</sup>.32<sup>s</sup>, 6<sup>m</sup>.21<sup>s</sup>, 11<sup>m</sup>.56<sup>s</sup> and 15<sup>m</sup>.10<sup>s</sup>. Molyneux slow, 3<sup>m</sup>.47<sup>s</sup>, as inferred from its errors on Oct. 20 and 22. (d) 'Had a faint companion,' viz. B. (w.) xxi. 296. (e) The mercury waving, and the observation very doubtful, the star being much clouded. (f) The bisection uncertain on account of cloud. (g) Very cloudy. (h) Assumed to be bisected by the fixed wire. The coincidence reading 10",030 is inferred from coincidences taken Oct. 17 and 23. (i) Very faint. (k) 'Bright and nothing near.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.	
		A	B	C	D	E	F						Int.	Ext.						
		"	"	"	"	"	"						"	"		"	"	"		"
Oct. 20	(a) Astræa B. ....	3. 33,5	31,8	38,5	31,9	34,0	36,6	+8,4	8,571	+2	226. 13. 43,15	29,798	42,9	40,6	63,14	84. 40. 4,79	T.			
	(b) B. (w.) II. 333...	...	...	...	...	...	...		20,538	+2	226. 9. 34,76				62,99	84. 35. 56,25	T.			
Oct. 21	(c) Polaris SP. R....	2. 53,5	54,6	56,1	50,9	56,9	55,5	+5,8	13,339		38. 36. 26,86	29,790	58,5	60,3	46,43	- 1. 28. 15,17	T.			
	(c) Polaris SP. R....	...	...	...	...	...	...		13,315		38. 36. 26,75					- 1. 28. 13,06	T.			
	(c) Polaris SP. ....	3. 1,8	2,9	3,3	1,8	2,0	2,9		11,371		140. 7. 12,76					- 1. 28. 15,79	T.			
	(c) Polaris SP. ....	...	...	...	...	...	...		11,351		140. 7. 13,52					- 1. 28. 15,03	T.			
	(c) Polaris SP. R....	2. 44,3	45,9	46,9	42,8	48,3	46,8		12,860		38. 36. 26,87					- 1. 28. 15,18	T.			
	(c) Polaris SP. ....	2. 6,9	8,2	8,7	6,9	7,5	8,9		8,581		140. 7. 14,69					- 1. 28. 13,86	T.			
Oct. 22	(d) ☉ N.L. ....	0. 19,4	20,9	19,7	18,1	19,7	23,5		11,449		242. 24. 29,20	29,792	59,5	61,0	111,19	100. 51. 38,27	T.			
	☉ S.L. ....	2. 29,1	31,4	31,0	27,2	29,8	32,4		11,449		242. 56. 39,55				113,79	101. 23. 51,22	T.			
	30 Capricorni ...	2. 43,0	45,8	46,1	40,6	46,2	47,0				250. 7. 45,32	29,936	56,5	55,0	163,99	108. 35. 47,19	T.			
	B. (w.) XXI. 418.	0. 9,4	12,9	9,0	7,0	11,0	13,9		7,472		244. 15. 42,44				122,67	102. 43. 2,99	T.			
	(e) B. (w.) XXI. 423.	...	...	...	...	...	...		17,783		244. 12. 7,36				122,34	102. 39. 27,58	T.			
	B. (w.) XXI. 495.	...	...	...	...	...	...		7,867		244. 15. 34,20				122,66	102. 42. 54,74	T.			
	(f) B.A.C. 7491....	0. 29,5	34,9	31,9	29,0	32,2	35,4				252. 25. 32,25				187,32	110. 53. 57,45	T.			
	B. (w.) XXI. 719.	2. 25,9	28,6	27,9	23,4	27,6	28,3				241. 27. 27,42				108,64	99. 54. 33,94	T.			
	B. (w.) XXI. 830.	0. 40,9	43,4	42,9	38,2	43,6	44,5				240. 40. 42,38				105,18	99. 7. 45,44	T.			
	(e) B. (w.) XXI. 844.	...	...	...	...	...	...		19,949	+2	240. 36. 53,89				104,91	99. 3. 56,68	T.			
	B.A.C. 7639....	2. 22,0	25,0	25,1	20,1	23,2	25,2				250. 7. 23,92				163,96	108. 35. 25,76	T.			
	B.A.C. 7665....	...	...	...	...	...	...		6,610		250. 8. 13,77				164,09	108. 36. 15,74	T.			
	H. C. 42960....	0. 43,6	46,4	44,0	41,0	47,6	48,1		6,610		239. 41. 35,12				101,06	98. 8. 34,06	T.			
	H. C. 42968....	...	...	...	...	...	...		2,894	+2½	239. 42. 52,51				101,15	98. 9. 51,54	T.			
	(g) B. (w.) XXII. 15.	3. 61,8	66,0	62,0	59,4	64,0	64,7				246. 49. 2,80				138,23	105. 16. 38,91	T.			
	B. (w.) XXII. 116	1. 21,7	24,2	23,9	18,9	23,9	25,7				244. 31. 23,32				124,13	102. 58. 45,33	T.			
	(g)(h) B. (w.) XXII. 213	4. 30,9	34,0	31,3	28,1	33,0	36,0		8,975		241. 29. 32,65				108,81	99. 56. 39,34	T.			
	B. (w.) XXII. 345	0. 12,0	16,5	13,8	10,6	14,0	16,9				242. 5. 14,02	29,950	56,1	54,7	111,67	100. 32. 23,57	T.			
	B. (w.) XXII. 452	2. 22,6	24,9	25,6	21,0	25,3	26,3			+2	241. 57. 24,64				111,06	100. 24. 33,58	T.			
	B. (w.) XXII. 548	1. 25,8	29,4	27,7	24,6	27,6	30,7				237. 11. 27,92				91,67	95. 38. 17,47	T.			
	(i) B. (w.) XXII. 640	1. 60,7	62,9	64,0	59,2	62,8	63,2		10,691	+2	246. 21. 27,10				135,32	104. 49. 0,30	T.			
	(i) B. (w.) XXII. 644	...	...	...	...	...	...				246. 22. 2,53				135,39	104. 49. 35,80	T.			
	B. (w.) XXII. 774	0. 11,0	14,0	11,4	8,9	12,7	15,3				241. 20. 12,25				108,20	99. 47. 18,33	T.			
	B. (w.) XXII. 864	0. 42,4	44,6	43,0	39,6	44,9	45,2				241. 15. 43,42				107,86	99. 42. 49,16	T.			
	(g) B. (w.) XXII. 999	4. 54,7	59,8	57,2	54,1	58,3	59,3				237. 54. 57,22				94,28	96. 21. 49,38	T.			
	(g) Neptune.....	4. 50,3	55,2	51,7	48,3	54,3	55,4				239. 49. 52,50	29,952	55,6	54,4	101,79	98. 16. 52,17	T.			
Oct. 24	(k) ☉ S.L. ....	3. 2,7	5,9	4,4	3,9	4,5	5,0		7,201	+2½	243. 38. 41,72	29,960	57,8	60,6	118,08	102. 5. 57,68	T.			
	☉ N.L. ....	0. 52,5	56,3	52,7	52,5	54,8	56,1		7,201	+2½	243. 6. 31,04				115,33	101. 33. 44,25	T.			
	Zenith Point....	2. 4,1	7,5	8,5	4,9	5,9	6,9		9,795		179. 21. 50,12						T.			
Oct. 25	B. (w.) XX. 1419.	3. 6,0	7,7	10,0	5,6	8,0	9,1				244. 58. 8,33	29,812	55,6	55,0	126,14	103. 25. 32,35	T.			
	(g) B.A.C. 7352....	4. 22,0	27,0	22,2	21,8	22,8	26,4		17,268		246. 36. 31,12				136,25	105. 4. 5,25	T.			
	H. C. 41070....	...	...	...	...	...	...		2,341		246. 41. 42,48				136,83	105. 9. 17,19	T.			
	(l) B. (w.) XXI. 222..	0. 12,2	15,7	13,5	12,0	13,2	17,2				244. 25. 14,02				123,04	102. 52. 34,94	T.			
	(h) B. (w.) XXI. 318.	0. 29,3	32,0	29,3	28,1	29,2	32,1				245. 35. 30,10				129,83	104. 2. 57,81	T.			
	B. (w.) XXI. 441.	0. 40,8	44,3	42,9	40,8	42,0	46,1				245. 45. 42,95				130,87	104. 13. 11,70	T.			
	B. (w.) XXI. 452.	...	...	...	...	...	...		13,285		245. 44. 13,57				130,72	104. 11. 42,17	T.			
	(g) B. (w.) XXI. 572.	4. 8,4	12,1	8,1	7,5	9,9	13,0				242. 44. 9,67				114,22	101. 11. 21,77	T.			
	(g) B. (w.) XXII. 304.	4. 19,3	24,0	20,5	18,7	20,7	24,1				246. 29. 21,08	29,842	53,1	51,3	136,64	104. 56. 55,60	T.			
	B. (w.) XXII. 444.	1. 7,2	9,1	9,2	7,0	8,3	13,2				244. 31. 9,22				124,64	102. 58. 31,74	T.			
	B. (w.) XXII. 531.	0. 42,0	44,0	43,0	39,4	45,0	46,1				241. 30. 43,38				109,36	99. 57. 50,62	T.			
	(m) B. (w.) XXII. 602.	0. 29,8	32,1	31,4	27,3	31,2	34,9				242. 35. 31,22				114,49	101. 2. 43,59	T.			
	B. (w.) XXII. 619.	...	...	...	...	...	...		12,137		242. 34. 25,78				114,40	101. 1. 38,06	T.			
	B. (w.) XXII. 752.	2. 54,1	55,0	57,0	52,4	56,1	57,9				241. 27. 55,98				109,15	99. 55. 3,01	T.			
	H. C. 44601....	3. 51,8	52,0	55,8	50,0	52,9	53,7				234. 53. 53,45				84,34	93. 20. 35,67	T.			
	(n) B. (w.) XXII. 914.	3. 41,0	41,3	44,9	38,6	42,0	44,9			+2½	240. 58. 42,67	29,846	52,1	49,6	107,35	99. 25. 47,90	T.			
	Neptune.....	0. 50,3	52,3	51,1	49,0	52,0	55,0				239. 50. 51,78				102,50	98. 17. 52,16	T.			
	H. C. 45758....	0. 40,6	45,3	41,7	40,8	42,8	46,0				232. 45. 43,00	29,848	51,3	48,7	78,40	91. 12. 19,28	T.			

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Very faint from mist. Reduction of the bar-reading to the wire-reading of the micrometer = +0",052. (b) Used for equatorial comparison with Astræa the same night. (c) Times by Molyneux, 12<sup>h</sup>. 56<sup>m</sup>. 14<sup>s</sup>, 57<sup>m</sup>. 13<sup>s</sup>, 58<sup>m</sup>. 51<sup>s</sup>, 59<sup>m</sup>. 48<sup>s</sup>, 67<sup>m</sup>. 21<sup>s</sup> and 69<sup>m</sup>. 39<sup>s</sup>. Molyneux slow on Hardy, 2<sup>m</sup>. 27<sup>s</sup>. High S.W. wind, but the reflection observations considered good. (d) A boiling motion: bisections uncertain. (e) Doubtful observations, the objects being very faint. (f) 'A bright star northward.' (g) Negative correction for Runs. (h) Very faint. (i) 'A third star north-following these.' (j) Very faint from misty cloud. (l) 'Only one star.' (m) 'Precedes the next 30 or 40 seconds.' (n) 'Not good.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.			
		A	B	C	D	E	F						Int.	Ext.		"	o	i		"		
		"	"	"	"	"	"						"	"							"	"
Oct. 25	(a) 11 Piscium.....	4. 1,4	5,0	1,0	0,2	2,3	6,9	+5,8	11,048	+2	234. 9. 2,62	29,848	51,3	48,7	82,49	92. 35. 42,99	T.					
	B. (w.) xxiii. 550	1. 17,5	21,0	18,2	17,1	18,3	21,8				232. 41. 19,23					78,19	91. 7. 55,30	T.				
	B. (w.) xxiii. 591	...	...	...	...	...	...				232. 40. 36,51					78,16	91. 7. 12,55	T.				
	(b) Metis.....	1. 52,1	52,6	54,4	50,2	53,1	55,0				233. 41. 53,27					29,850	49,2	46,6	81,48	92. 8. 32,63	T.	
	(c) Polaris R.....	0. 55,2	60,8	58,0	56,9	56,9	60,0				35. 40. 7,26								43,03	1. 28. 7,83	T.	
	(c) Polaris R.....	...	...	...	...	...	...				35. 40. 6,72								...	1. 28. 8,37	T.	
	(c)(a) Polaris.....	4. 26,1	31,2	28,0	26,7	26,5	32,5				11,676					143. 3. 33,49	...	1. 28. 8,34	T.			
	(c) Polaris.....	...	...	...	...	...	...				11,692					143. 3. 33,66	...	1. 28. 8,51	T.			
	(c) Polaris R.....	0. 18,4	25,2	20,7	20,5	19,8	24,3				9,339					35. 40. 5,47	...	1. 28. 9,62	T.			
	(c) Polaris.....	3. 10,9	12,7	15,0	10,0	10,9	13,0				8,569					143. 3. 33,71	...	1. 28. 8,56	T.			
	(b)(d) Astræa B.....	1. 33,4	35,7	36,1	32,2	31,7	35,9				5,203					226. 42. 52,17	29,836	51,0	46,5	63,52	85. 9. 13,57	T.
	(a)(e) Polaris SP. R....	4. 30,5	36,0	30,4	30,3	31,6	34,9				18,067					38. 36. 24,33				46,17	-1. 28. 12,38	T.
	(e) Polaris SP. R....	3. 5,3	8,8	10,0	6,0	6,6	8,0				14,172					38. 36. 25,50				...	-1. 28. 13,55	T.
	(e) Polaris SP.....	2. 18,2	20,2	19,5	17,4	18,1	19,5				8,840					140. 7. 14,53	...	-1. 28. 13,76	T.			
	(e) Polaris SP.....	...	...	...	...	...	...				8,790					140. 7. 14,64	...	-1. 28. 13,65	T.			
Oct. 28	14 Piscium.....	1. 36,2	38,5	39,0	35,8	37,2	39,4	7,850	7,888	7,850	233. 36. 38,00	29,582	54,8	53,5	79,36	92. 3. 15,24	T.					
	(f) B. (w.) xxiii. 748	2. 23,2	25,0	26,1	23,0	24,5	25,6				230. 13. 25,23					70,25	88. 39. 53,36	T.				
	(g) B. (w.) xxiii. 874	2. 7,0	10,1	10,2	6,7	9,2	10,6				230. 27. 9,38					70,82	88. 53. 38,08	T.				
	B. (w.) xxiii. 976	2. 55,0	56,8	58,1	53,0	55,6	56,9				229. 7. 56,47					67,58	87. 34. 21,93	T.				
	B. (w.) xxiii. 1088	0. 31,0	32,7	31,0	29,3	31,0	33,8				235. 40. 31,57					29,592	54,5	53,0	85,80	94. 7. 15,25	T.	
	B. (w.) xxiii. 1207	0. 16,9	19,6	17,8	15,3	16,3	20,7				234. 15. 17,82								81,37	92. 41. 57,07	T.	
	B. (w.) o. 73.....	2. 2,1	4,0	5,1	0,9	3,8	5,0				236. 22. 3,88								88,07	94. 48. 49,83	T.	
	(h) B. (w.) o. 828 ...	4. 10,8	11,1	15,0	10,6	11,8	13,0				232. 44. 12,87					29,604	53,8	51,8	77,20	91. 10. 47,95	T.	
	(i) Metis.....	0. 19,5	21,8	21,1	18,1	19,0	22,6				233. 45. 20,42								80,12	92. 11. 58,42	T.	
	(a)(k) Polaris R.....	4. 41,2	46,1	44,0	41,5	43,0	45,0				35. 40. 7,32								42,23	1. 28. 8,57	T.	
	(k) Polaris R.....	...	...	...	...	...	...				7,888					35. 40. 6,51	...	1. 28. 9,38	T.			
	(k) Polaris.....	3. 12,2	14,1	15,9	11,2	11,0	14,0				8,155					143. 3. 32,19	42,23	1. 28. 7,84	T.			
	(k) Polaris.....	...	...	...	...	...	...				8,153					143. 3. 32,67	...	1. 28. 8,32	T.			
	(k) Polaris R.....	4. 14,1	15,4	18,5	12,9	14,0	16,1				6,236					35. 40. 6,45	...	1. 28. 9,44	T.			
	(k) Polaris.....	3. 12,2	14,7	15,9	11,8	11,2	14,9				8,668					143. 3. 31,63	...	1. 28. 7,28	T.			
	(a) Astræa.....	4. 39,1	43,2	40,7	38,3	40,7	43,0				8,911					226. 59. 42,63	29,612	53,8	50,7	63,12	85. 26. 3,63	T.
Oct. 30	(l) Polaris SP. R....	2. 31,1	34,0	34,9	30,5	32,2	34,3	+8,6	12,440	12,425	38. 36. 21,82	29,912	52,0	52,3	47,38	-1. 28. 11,11	T.					
	(l) Polaris SP. R....	...	...	...	...	...	...				38. 36. 22,21					...	-1. 28. 11,50	T.				
	(l) Polaris SP. ....	1. 54,7	56,4	56,9	53,2	53,3	55,2				7,829					140. 7. 19,55	...	-1. 28. 9,92	T.			
	(l) Polaris SP.....	...	...	...	...	...	...				7,821					140. 7. 19,47	...	-1. 28. 10,00	T.			
	(l) Polaris SP. R....	2. 6,2	8,9	9,4	5,8	7,0	9,8				11,376					38. 36. 22,66	...	-1. 28. 11,95	T.			
	(l) Polaris SP.....	2. 26,4	27,1	27,6	24,7	22,3	27,0				9,113					140. 7. 18,49	...	-1. 28. 10,98	T.			
Oct. 31	☉ N.L.....	3. 21,8	23,0	26,0	20,6	20,0	24,4	11,283	11,283	9,747	245. 27. 35,98	29,900	53,7	54,5	129,54	103. 55. 3,43	T.					
	☉ S.L.....	0. 32,2	37,8	35,8	33,7	32,7	36,8				245. 59. 47,38					132,85	104. 27. 18,14	T.				
	Zenith Point....	2. 3,2	5,7	7,9	3,8	4,2	5,6				179. 21. 50,09					...	...	T.				
	(a) ♈ Aquarii.....	4. 23,0	25,6	21,7	21,6	21,9	23,3				239. 54. 23,52					29,894	48,6	47,0	103,46	98. 21. 24,89	T.	
	Neptune.....	2. 32,2	33,8	35,9	31,9	33,0	37,5				239. 52. 34,78								103,34	98. 19. 36,03	T.	
Nov. 1	☉ S.L.....	3. 43,2	50,7	54,9	49,0	49,8	50,7	8,221	8,221	14,208	246. 19. 7,90	29,880	54,1	57,6	133,97	104. 46. 39,78	T.					
	☉ N.L.....	1. 36,9	42,0	39,9	36,7	37,7	39,4				245. 46. 55,48					130,60	104. 14. 23,99	T.				
	(a) B. (w.) xxi. 717..	4. 38,8	43,6	38,9	37,1	39,1	43,0				244. 14. 39,98					29,840	51,0	49,6	123,54	102. 42. 1,43	T.	
	H. C. 42467.....	0. 12,9	17,9	15,4	12,5	12,9	16,4				242. 5. 14,73								112,43	100. 32. 25,07	T.	
	(a) B. (w.) xxi. 1060.	4. 3,0	8,7	5,0	2,9	3,9	8,9				246. 9. 5,13								134,91	104. 36. 37,95	T.	
	B.A.C. 7640.....	1. 19,0	23,0	22,6	19,0	19,9	22,9				247. 21. 21,45								143,03	105. 49. 2,39	T.	
	(m) B. (w.) xxi. 1174	...	...	...	...	...	...				247. 19. 32,82								142,82	105. 47. 13,55	T.	
	H. C. 42841.....	...	...	...	...	...	...				247. 19. 13,02								142,78	105. 46. 53,71	T.	
	(n) B.A.C. 7697.....	2. 19,9	23,4	22,1	17,6	20,0	22,7				242. 42. 21,63								115,45	101. 9. 34,99	T.	
	B. (w.) xxii. 91..	2. 58,0	61,1	62,9	57,8	58,4	60,8				246. 8. 0,68					29,838	51,0	48,7	135,04	104. 35. 53,63	T.	
	B. (w.) xxii. 213.	4. 29,7	32,1	34,1	26,9	29,8	32,1				241. 29. 32,07								109,84	99. 56. 39,82	T.	
	B. (w.) xxii. 336.	3. 55,9	57,5	59,8	54,0	56,6	56,9				242. 28. 57,92								114,55	100. 56. 10,38	T.	
	(o) B. (w.) xxii. 429.	2. 4,1	7,4	6,3	2,7	4,3	7,1				238. 12. 5,92								96,15	96. 38. 59,98	T.	
	(o) B. (w.) xxii. 434.	...	...	...	...	...	...				238. 14. 5,05								96,28	96. 40. 59,24	T.	

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'Good: quite alone.' (c) Times by Molyneux, 1<sup>h</sup>. 3<sup>m</sup>. 4<sup>s</sup>, 4<sup>m</sup>. 5<sup>s</sup>, 6<sup>m</sup>. 5<sup>s</sup>, 7<sup>m</sup>. 5<sup>s</sup>, 15<sup>m</sup>. 6<sup>s</sup> and 18<sup>m</sup>. 8<sup>s</sup>. Molyneux slow on Hardy, 2<sup>m</sup>. 31<sup>s</sup>. Ill-defined and unsteady in the reflection observations. (d) Reduction to wire-reading = + 0",068. (e) Times by Molyneux, 13<sup>m</sup>. 7<sup>s</sup>. 43<sup>s</sup>, 12<sup>m</sup>. 57<sup>s</sup>, 15<sup>m</sup>. 20<sup>s</sup> and 16<sup>m</sup>. 3<sup>s</sup>. Molyneux slow on Hardy, 2<sup>m</sup>. 31<sup>s</sup>. The sky had just cleared: the star was steady, and the observations were considered good. (f) 'One of Mag. 8 south-following.' (g) 'A brighter north-preceding.' (h) Cloudy. (i) The circle reading has been increased 5'. The approximate time noted by T agreed with B's transit observation. (k) Times by Molyneux, 1<sup>h</sup>. 1<sup>m</sup>. 16<sup>s</sup>, 4<sup>m</sup>. 3<sup>s</sup>, 6<sup>m</sup>. 45<sup>s</sup>, 7<sup>m</sup>. 40<sup>s</sup>, 14<sup>m</sup>. 32<sup>s</sup> and 17<sup>m</sup>. 6<sup>s</sup>. Molyneux slow, 4<sup>m</sup>. 8<sup>s</sup>, as inferred from a comparison with Hardy on Oct. 30. (l) 'The star steady and the observations good.' Times by Molyneux, 13<sup>m</sup>. 2<sup>m</sup>. 49<sup>s</sup>, 3<sup>m</sup>.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Nov. 1	B. (w.) XXII. 547.	2. 20,0	23,2	24,1	18,6	20,1	24,1	+8,6			244. 27. 22,37	29,838	51,0	48,7	124,94	102. 54. 45,22		T.	
	B. (w.) XXII. 640	1. 27,7	32,1	30,0	27,0	27,0	30,1		9,020		246. 21. 29,00				136,50	104. 49. 3,41		T.	
	B. (w.) XXII. 644.	...	...	...	...	...	...		7,371		246. 22. 3,40				136,56	104. 49. 37,87		T.	
	(a) * R. 22 <sup>h</sup> . 30 <sup>m</sup> . 44 <sup>s</sup>	...	...	...	...	...	...		12,506		246. 20. 16,29				136,36	104. 47. 50,56		T.	
	B. (w.) XXII. 896.	1. 57,0	60,8	59,2	55,0	56,9	59,8				239. 46. 58,68	29,838	50,7	48,6	102,41	98. 13. 59,00		T.	
	Neptune.....	2. 48,1	51,1	51,8	46,1	49,1	51,7				239. 52. 50,47				102,82	98. 19. 51,20		T.	
	(b)(c) Thetis B. ....	3. 57,4	60,0	62,1	56,8	57,5	60,3		6,418		244. 59. 53,03				128,09	103. 27. 19,03		T.	
	B. (w.) XXIII. 187	2. 16,6	18,9	17,9	14,5	15,0	19,5				233. 52. 17,72			48,6	81,63	92. 18. 57,26		T.	
	(d) B. (w.) XXIII. 285	1. 22,3	25,0	24,8	20,8	22,1	25,5				240. 26. 23,82				105,18	98. 53. 26,91		T.	
	(e) B. (w.) XXIII. 406	4. 7,0	12,6	7,1	6,0	7,1	12,0				234. 49. 8,38				84,54	93. 15. 50,83		T.	
	(f) B. (w.) XXIII. 409	...	...	...	...	...	...		10,879		234. 48. 29,19				84,50	93. 15. 11,60		T.	
	(g) Metis.....	1. 36,2	40,0	38,7	35,4	37,2	39,8				233. 46. 38,35	29,812	50,3	48,7	81,26	92. 13. 17,52		T.	
(h) H. C. 8826.....	1. 16,1	20,4	20,3	17,1	17,1	20,8		4,826		215. 52. 46,09	29,768	51,0	49,4	43,00	74. 18. 47,00		T.		
(g)(c) Irene B.....	...	...	...	...	...	...		9,572		215. 51. 6,09				42,96	74. 17. 6,96		T.		
Nov. 2	☉ N.L.....	2. 19,7	25,0	24,4	21,1	20,3	24,4		13,069		246. 5. 58,29	29,896	55,0	56,0	133,08	104. 33. 29,28		T.	
	(e) ☉ S.L.....	4. 34,0	40,7	35,5	34,0	34,4	38,5		13,069		246. 38. 11,19				136,54	105. 5. 45,64		T.	
Nov. 3	Neptune.....	3. 14,4	17,6	18,4	15,1	15,6	17,9				239. 53. 17,43	30,042	52,0	51,4	102,95	98. 20. 18,29		T.	
	α Andromedæ R..	1. 32,4	37,1	35,1	31,9	33,2	34,8		9,239		335. 26. 29,54	30,030	51,8	51,0	25,91	61. 42. 54,46		T.	
	α Andromedæ ...	2. 14,1	16,0	15,2	12,1	12,6	14,4		9,239		203. 17. 9,73					61. 42. 53,55		T.	
	H. C. 8826.....	1. 42,1	45,1	44,9	40,9	43,6	44,0		6,015		215. 52. 46,19	29,998	50,9	49,0	43,37	74. 18. 47,47		T.	
	(i) Irene B.....	...	...	...	...	...	...		9,221		215. 51. 38,55				43,34	74. 17. 39,80		T.	
Nov. 8	(k) ☉ S.L.....	2. 16,7	21,4	20,3	16,8	17,4	20,0	+8,1	8,886		248. 27. 21,76	30,238	51,8	52,0	152,46	106. 55. 12,26		T.	
	(e) ☉ N.L.....	4. 55,3	61,2	56,8	55,4	56,4	59,3		8,886		247. 54. 59,76				148,32	106. 22. 46,12		T.	
	B. (w.) XXII. 388.	0. 1,6	6,1	2,1	0,0	0,7	5,9				245. 5. 2,75	30,308	49,6	45,8	131,37	103. 32. 32,16		T.	
	ζ Pegasi R.....	0. 4,1	9,0	5,0	3,4	4,3	8,8		11,937		317. 14. 4,54				53,86	79. 55. 47,28		T.	
	ζ Pegasi.....	0. 34,0	40,8	36,6	34,1	35,0	38,6		11,937		221. 29. 35,41					79. 55. 47,31		T.	
	Neptune.....	3. 58,7	61,0	63,7	57,1	59,7	62,1		8,728	+2	239. 54. 7,05	30,332	48,1	44,8	105,43	98. 21. 10,52		T.	
	Metis.....	0. 53,9	37,1	35,9	32,7	34,1	37,2		8,255		233. 40. 50,84	30,350	45,1	41,0	83,76	92. 7. 32,64		T.	
	Aldebaran R. ...	3. 23,0	24,3	27,2	21,8	20,7	24,1		11,714		323. 22. 27,82	30,390	42,4	38,2	44,07	73. 47. 14,21		T.	
	Aldebaran .....	2. 9,0	11,6	13,2	7,9	7,3	11,6		11,714		215. 21. 14,07					73. 47. 16,18		T.	
	(l) Irene B.....	2. 8,5	11,0	12,6	7,9	7,5	11,9		7,297	+2	215. 52. 44,96				44,92	74. 18. 47,92		T.	
	Nov. 9	(e) Neptune.....	4. 15,8	19,7	17,5	13,8	15,1	21,0		9,030		239. 54. 16,32	30,470	42,4	40,3	106,91	98. 21. 21,27		T.
		α Pegasi R.....	1. 26,7	31,0	29,1	25,6	26,7	30,8		13,224		321. 35. 0,61				46,95	75. 34. 44,30		T.
α Pegasi .....		0. 8,6	11,4	10,0	6,0	6,9	11,8		13,224		217. 8. 41,04					75. 34. 46,03		T.	
(m) B. (w.) XXIII. 323nf		3. 32,1	32,9	36,2	29,8	30,7	34,5				240. 48. 33,65				110,94	99. 15. 42,63		T.	
B. (w.) XXIII. 427		1. 60,7	62,1	64,0	57,9	60,0	63,8				241. 37. 1,97				114,73	100. 4. 14,74		T.	
(n) ι Piscium R.....		1. 32,0	35,6	36,5	30,1	32,1	34,0		13,006		312. 0. 10,24	30,450	40,7	38,4	65,95	85. 9. 53,67		T.	
(e) ι Piscium.....		4. 52,4	56,1	56,0	51,0	51,9	56,1		13,006		226. 43. 30,32					85. 9. 54,31		T.	
(o) 20 Piscium.....		2. 37,4	39,4	41,1	34,8	36,5	41,0				235. 7. 39,08				89,14	93. 34. 26,26		T.	
(p) B. (w.) XXIII. 922		3. 41,5	42,0	45,9	38,8	40,9	43,0		9,040		231. 38. 42,19				78,47	90. 5. 18,70		T.	
α Andromedæ R..		1. 55,1	59,0	60,7	54,9	57,0	58,4		10,271		335. 26. 31,54	30,444	40,2	38,0	26,98	61. 42. 53,40		T.	
α Andromedæ ...		2. 33,6	33,0	36,8	31,4	30,3	34,9		10,271	+1½	203. 17. 7,69					61. 42. 52,71		T.	
(e) B. (w.) o. 174....		4. 37,9	40,7	39,1	35,1	36,9	41,8		8,900		231. 59. 40,57				79,52	90. 26. 18,13		T.	
(q) B. (w.) o. 164 B..		...	...	...	...	...	...		88,900		232. 3. 7,90				79,68	90. 29. 45,62		T.	
(r) 45 Piscium.....		0. 39,8	42,2	42,3	37,1	40,7	43,4				224. 40. 41,10				61,45	83. 7. 0,59		T.	
(s) B. (w.) o. 382....		1. 9,0	11,7	12,8	6,6	7,4	13,4				227. 41. 10,47				68,25	86. 7. 36,76		T.	
(t) δ Andromedæ R..		3. 21,6	25,5	27,8	22,3	23,1	25,0		9,828		337. 13. 7,85	30,444	40,0	37,7	24,77	59. 56. 14,88		T.	
δ Andromedæ ...		0. 48,6	50,7	52,3	46,5	47,3	51,0		9,828		201. 30. 32,35					59. 56. 15,16		T.	
(e) Metis.....		4. 12,9	14,9	14,9	10,1	10,3	16,9		9,035		233. 39. 12,39				84,51	92. 5. 54,94		T.	
Nov. 10	(e) Neptune.....	4. 21,9	25,3	25,5	20,6	22,8	29,0				239. 54. 24,03	30,246	39,0	36,0	107,11	98. 21. 29,18		T.	
	α Pegasi R.....	0. 39,6	42,9	42,4	37,8	39,8	42,7		10,970	-1½	321. 34. 59,87				47,02	75. 34. 45,11		T.	
	(e) α Pegasi.....	4. 20,3	23,6	21,9	18,1	18,9	23,5		10,970	+1½	217. 8. 39,87					75. 34. 44,93		T.	
	τ Pegasi R.....	1. 57,1	59,9	61,0	56,0	57,8	60,4		11,685		330. 6. 3,22				34,00	67. 3. 28,74		T.	
	τ Pegasi.....	3. 27,0	27,1	31,0	24,7	25,2	26,8		11,685		208. 37. 31,89					67. 3. 23,93		T.	

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) The third star noticed Oct. 22. (b) The observation quite uncertain owing to the faintness of the Planet and mist on the eye-piece. 'A bright object south-preceding.' (c) Reduction to wire-reading = +0",048. (d) Observed doubtfully. (e) Negative correction for Runs. (f) 'The north-following star.' (g) 'Good.' (h) Compared the same night with Irene. (i) Reduction to wire-reading = +0",037. (k) The Limbs scarcely discernible through misty cloud. (l) 'No other object seen.' Reduction to wire-reading = +0",053. (m) 'A neat double-star; the components nearly on the same parallel.' (n) Bisection doubtful; the mercury disturbed. (o) 'Not seen double.' (p) Very faint. (q) 'Exactly bisected by the Bar.' Reduction to wire-reading = +0",060. (r) 'A fainter north-preceding.' (s) Faint from cloud. (t) Disturbed mercury.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Nov.10	ψ Pegasi R.....	0. 10,7	15,9	14,8	12,1	11,0	15,5	+8,1	11,569		331. 29. 19,79	30,248	38,8	34,5	32,20	65. 40. 10,37	T.
	ψ Pegasi.....	0. 9,5	14,5	12,8	7,7	8,9	14,1		11,569	+1½	207. 14. 17,86					65. 40. 8,10	T.
	α Andromedæ R.	1. 44,4	47,3	49,8	44,3	44,7	47,9		9,732		335. 26. 31,61				27,01	61. 42. 53,36	T.
	α Andromedæ...	2. 21,9	23,5	24,9	20,1	19,4	24,0		9,732		203. 17. 7,66					61. 42. 52,71	T.
	ρ Andromedæ R.	0. 34,2	37,9	39,3	34,9	35,3	38,5		13,982		344. 18. 52,93				16,37	52. 50. 21,40	T.
	ρ Andromedæ...	1. 27,1	29,7	32,1	26,2	35,9	30,2		13,982	+2¼	194. 24. 47,25					52. 50. 21,66	T.
	(a)(b)β Ceti R. ....	4. 58,3	61,4	61,9	57,9	58,2	63,0		10,583		288. 24. 27,10	30,254	36,9	34,4	174,85	108. 47. 25,71	T.
	(a) β Ceti.....	4. 45,0	48,5	48,0	43,8	45,5	50,7		10,583		250. 19. 13,85					108. 47. 26,74	T.
(c) Metis B.....	2. 17,7	19,1	22,1	14,4	17,0	21,7		9,210		233. 37. 13,67				84,47	92. 3. 56,18	T.	
Nov.11	(a) Neptune.....	4. 28,4	31,8	30,4	26,4	28,2	33,5				239. 54. 29,65	30,312	40,9	39,5	106,56	98. 21. 34,25	T.
	α Pegasi R.....	0. 34,9	40,8	38,0	35,2	35,3	40,3		10,854		321. 34. 58,91				46,78	75. 34. 45,83	T.
	(a) α Pegasi.....	4. 18,7	22,1	20,7	16,1	17,1	22,1		10,854		217. 8. 40,61					75. 34. 45,43	T.
Nov.12	(d) ⊙ N.L.....	2. 17,1	20,7	22,1	16,8	17,6	21,9		9,796		249. 2. 3,40	30,254	42,1	42,2	160,44	107. 30. 1,88	T.
	(a) ⊙ S.L.....	4. 37,1	42,1	40,0	35,3	36,7	42,0		9,796		249. 34. 22,17				165,10	108. 2. 25,31	T.
Nov.14	Zenith Point....	2. 0,0	4,2	6,5	0,6	3,2	3,7		9,654		179. 21. 40,96						T.
	Neptune.....	4. 45,1	47,7	50,9	43,7	47,8	49,4				239. 54. 48,73	29,645	40,4	38,0	104,57	98. 21. 51,34	T.
	α Pegasi R.....	1. 8,0	13,0	11,5	9,0	8,6	13,8		12,424		321. 34. 59,55				45,90	75. 34. 44,31	T.
	(a) α Pegasi.....	4. 50,8	54,3	52,5	47,8	52,9	53,8		12,424	+2	217. 8. 40,71					75. 34. 44,65	T.
	τ Pegasi R.....	2. 0,0	4,8	5,1	0,8	2,7	5,7		11,841	+2	330. 6. 4,22				33,19	67. 3. 26,93	T.
	(e) τ Pegasi.....	3. 29,0	31,0	36,0	27,7	31,1	31,4		11,841	+3	208. 37. 33,29					67. 3. 24,52	T.
	B. (w.) xxiii. 399	3. 28,1	30,2	33,4	25,9	30,0	32,9				230. 28. 31,03				73,34	88. 55. 2,41	T.
	(f) B. (w.) xxiii. 516	4. 10,6	11,8	17,0	8,3	12,9	15,3				241. 49. 13,78				113,14	100. 16. 24,96	T.
Nov.16	⊙ S.L.....	1. 33,2	37,0	37,9	32,6	33,6	37,9		8,937		250. 56. 37,12	29,670	42,6	42,6	171,28	109. 4. 46,44	T.
	(a) ⊙ N.L.....	4. 15,6	21,7	19,0	14,8	17,0	22,2		8,937		250. 4. 19,52				166,24	108. 32. 23,80	T.
	(a)(g) Polaris R.....	4. 34,5	41,9	38,8	35,1	37,4	41,5		7,295		35. 40. 13,50	29,688	38,8	37,0	43,66	1. 28. 0,80	T.
	(g) Polaris R. ....	...	...	...	...	...	...		7,308		35. 40. 12,94					1. 28. 1,36	T.
	(g) Polaris.....	3. 23,8	27,1	30,4	22,8	24,0	28,3		9,099		143. 3. 26,13					1. 28. 0,51	T.
	(g) Polaris.....	...	...	...	...	...	...		9,114		143. 3. 26,24					1. 28. 0,62	T.
	ν Ceti R.....	3. 14,7	15,0	20,6	13,8	14,3	18,0		11,934		312. 7. 15,75	29,685	38,7	36,5	64,29	85. 2. 46,50	T.
	ν Ceti.....	2. 21,0	25,9	28,0	22,2	22,3	25,5		11,934		226. 36. 23,60					85. 2. 45,93	T.
	α Ceti R.....	1. 49,7	53,1	54,3	47,9	51,1	53,2		11,604		310. 40. 57,73				67,61	86. 29. 7,84	T.
	α Ceti.....	3. 33,1	36,7	40,1	33,1	33,8	37,7		11,604		228. 2. 42,40					86. 29. 8,05	T.
	(a)(h) Euterpe.....	4. 30,5	35,0	34,3	30,0	32,1	36,1				215. 54. 32,88	29,678	38,7	36,5	44,08	74. 20. 35,00	T.
	(h) Euterpe.....	...	...	...	...	...	...		9,028	+2	215. 54. 32,40					74. 20. 34,52	T.
	ξ Tauri R.....	3. 0,0	4,5	6,1	1,1	3,3	5,1		8,776	+½	316. 23. 8,84				55,39	80. 46. 44,51	T.
	(i) ξ Tauri.....	0. 50,0	54,0	55,5	49,7	52,9	55,9		10,050	+2½	222. 20. 31,49					80. 46. 44,92	T.
	η Tauri R.....	0. 34,1	39,0	38,8	34,3	35,0	39,4		14,957		330. 48. 32,67				32,37	66. 20. 57,66	T.
	η Tauri.....	2. 8,0	10,7	14,2	8,6	9,7	11,4		14,957	+1	207. 55. 6,83					66. 20. 57,24	T.
ζ Persei R.....	2. 4,7	8,9	12,0	5,1	7,0	11,1		11,913	-½	338. 36. 7,94				22,56	58. 33. 12,58	T.	
ζ Persei.....	3. 27,9	30,6	35,5	26,7	28,7	31,6		11,913	+1½	200. 7. 30,57					58. 33. 11,17	T.	
H. C. 8826.....	2. 23,0	26,0	28,4	21,9	23,6	25,6		8,138		215. 52. 43,38	29,680	38,0	36,1	44,07	74. 18. 45,49	T.	
Nov.17	(k) ⊙ N.L.....	3. 23,9	27,6	28,7	22,1	24,7	28,4		7,411		250. 18. 59,98	29,760	40,6	39,6	170,08	108. 47. 8,10	T.
	⊙ S.L.....	0. 45,6	50,0	48,6	43,9	47,0	50,4		7,411		250. 51. 20,95				175,30	109. 19. 34,29	T.
	(l) B. (w.) xxii. 230.	1. 29,3	31,1	32,2	28,1	29,5	34,4				244. 11. 31,17	29,818	37,5	35,6	126,80	102. 38. 56,01	T.
	54 Aquarii.....	0. 53,5	56,0	55,5	50,9	54,3	57,9				243. 30. 54,93				123,04	101. 58. 16,01	T.
	σ Aquarii.....	2. 8,4	9,1	10,3	4,7	8,6	11,7		5,900		242. 58. 14,04				120,15	101. 25. 32,23	T.
	B. (w.) xxii. 484.	...	...	...	...	...	...		14,731	+2	242. 55. 9,72				119,88	101. 22. 27,64	T.
	B. (w.) xxii. 487.	...	...	...	...	...	...		18,126	+2	242. 53. 58,90				119,77	101. 21. 16,71	T.
	(m) B. (w.) xxii. 694.	1. 42,0	44,7	45,1	40,0	44,0	47,0				239. 6. 44,27			36,0	102,28	97. 33. 44,59	T.
	(m) B. (w.) xxii. 774.	0. 9,0	10,9	10,7	5,5	8,9	13,3				241. 20. 9,77				111,98	99. 47. 19,79	T.
	(a) τ Aquarii.....	4. 14,8	18,3	17,0	12,9	15,8	20,2				245. 54. 16,30				137,08	104. 21. 51,42	T.
	(a)(m) Neptune.....	4. 56,0	59,1	58,1	54,0	57,6	61,0		8,987		239. 54. 57,89	29,828	38,0	36,0	105,67	98. 22. 1,60	T.
	(n) α Pegasi R.....	2. 9,0	12,7	13,0	8,2	10,9	13,3		15,321		321. 34. 59,92				46,38	75. 34. 44,42	T.
	α Pegasi.....	0. 53,7	55,0	56,1	49,9	53,0	57,0		15,321		217. 8. 42,52					75. 34. 46,94	T.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'Pretty good.' (c) 'The north-following and brighter of two.' Reduction to wire-reading = +0",060.  
 (d) 'A rapid boiling of the limbs made it impossible to bisect them with certainty.' (e) Bisected hurriedly near the comb. (f) 'A brighter northward.'  
 (g) Times by Molyneux, 1<sup>h</sup>. 3<sup>m</sup>. 26<sup>s</sup>, 4<sup>m</sup>. 39<sup>s</sup>, 6<sup>m</sup>. 33<sup>s</sup>, and 7<sup>m</sup>. 20<sup>s</sup>. Molyneux slow on Hardy, 3<sup>m</sup>. 45<sup>s</sup>. (h) Two bisections for greater certainty: both considered good.  
 (i) Supposed to be taken on the fixed wire. The coincidence reading 10",050 was obtained on Nov. 14. (k) Unsteady. (l) Faint, and bisected doubtfully. (m) Very faint, the sky being thick. (n) 'A crystallized film over the mercury.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Nov.17	Piscium R. ....	1. 39,1	42,0	42,5	37,3	39,6	42,6	+8,1	13,454		312. 0. 8,06	29,839	37,5	35,3	65,05	85. 9. 54,95	T.		
	Piscium. ....	0. 3,3	7,8	6,1	2,9	4,0	9,5		13,454		226. 43. 32,71					85. 9. 55,80	T.		
	(a)(b) Metis B. ....	3. 44,5	49,5	46,4	43,1	46,3	50,0		10,897	+2	233. 18. 5,65	29,838	37,0	35,1	82,22	91. 44. 45,91	T.		
	(c) Euterpe. ....	1. 38,5	41,0	41,8	37,1	39,1	42,6		6,543		215. 57. 31,72	29,842	36,0	34,2	44,62	74. 23. 34,38	T.		
	(d) Irene B. ....	2. 17,0	18,8	21,8	15,5	16,1	21,3		3,937	+2	215. 54. 3,68	29,846	36,0	34,0	44,55	74. 20. 6,27	T.		
	H. C. 8826. ....	...	...	...	...	...	...		7,849		215. 52. 43,04				44,51	74. 18. 45,59	T.		
Nov.18	B. (w.) xxii. 961.	2. 21,2	25,0	26,3	19,0	21,9	27,1	+11,5	6,945		234. 38. 7,20	29,990	35,2	32,4	87,30	93. 4. 52,93	T.		
	(a) Neptune. ....	4. 56,3	60,5	57,3	55,4	58,1	64,7		8,976		239. 54. 59,22				107,06	98. 22. 4,71	T.		
	(e) α Pegasi R. ....	1. 16,1	19,8	20,0	15,3	16,8	21,1		12,743		321. 35. 0,60				46,98	75. 34. 43,95	T.		
	(a) α Pegasi. ....	4. 56,6	60,0	59,1	54,1	57,0	60,8		12,743		217. 8. 39,84					75. 34. 45,25	T.		
	(f) B. (w.) xxiii. 83.	0. 13,0	15,9	16,6	11,9	14,0	19,8				240. 20. 15,30				108,90	98. 47. 22,63	T.		
	τ Pegasi R. ....	1. 40,0	45,9	45,0	40,0	42,8	45,3		10,857		330. 6. 5,08				33,97	67. 3. 26,46	T.		
	τ Pegasi. ....	3. 9,4	9,9	15,1	7,9	9,7	12,5		10,857	+1	208. 37. 33,29					67. 3. 25,69	T.		
	(a) B. (w.) xxiii. 664	4. 24,1	29,3	26,7	24,3	25,6	30,9				237. 54. 26,60	29,990	35,6	33,6	98,59	96. 21. 23,62	T.		
	(g) B. (w.) xxiii. 956	1. 30,1	33,0	32,1	27,9	29,0	36,0				228. 41. 31,93			34,0	70,24	87. 8. 0,60	T.		
	B. (w.) xxiii. 1066	2. 37,0	40,3	42,5	36,1	37,3	42,1				228. 12. 40,23				69,06	86. 39. 7,72	T.		
	(h) α Andromedæ R. ...	1. 34,4	39,5	39,1	33,7	35,6	40,3		9,291	-1	335. 26. 31,57	29,994	35,6	33,0	26,87	61. 42. 52,87	T.		
	(i) α Andromedæ. ....	2. 28,0	28,2	31,7	25,4	26,7	30,8		10,052	+1½	203. 17. 7,66					61. 42. 52,96	T.		
	B. (w.) o. 279. ....	4. 41,8	47,0	44,3	42,1	42,3	48,7				232. 14. 46,18				79,89	90. 41. 24,50	T.		
	B.A.C. 113. ....	0. 27,8	32,2	32,9	26,1	27,7	35,9				227. 30. 30,62				67,53	85. 56. 56,58	T.		
	H. C. 745. ....	...	...	...	...	...	...		6,964		227. 31. 13,09				67,56	85. 57. 39,08	T.		
	B. (w.) o. 612. ....	2. 19,3	21,5	23,7	19,0	18,9	25,3				223. 47. 22,18	29,994	35,1	32,7	59,35	82. 13. 39,96	T.		
	(a) Metis. ....	4. 33,1	36,8	35,7	32,7	33,4	40,8				233. 14. 35,25				82,89	91. 41. 16,57	T.		
	Metis. ....	...	...	...	...	...	...		9,060	+1	233. 14. 34,04					91. 41. 15,36	T.		
	(k) Euterpe. ....	0. 28,0	30,0	31,4	27,3	27,6	35,2		9,046		216. 0. 29,14	29,994	35,0	32,0	45,13	74. 26. 32,70	T.		
	(l) Irene B. ....	2. 50,1	53,2	56,4	49,5	50,9	54,9		5,346	+2	215. 54. 8,86	29,994	34,7	32,3	44,93	74. 20. 12,22	T.		
	H. C. 8826. ....	...	...	...	...	...	...		9,946		215. 52. 43,25				44,89	74. 18. 46,57	T.		
Nov.19	Neptune. ....	0. 0,1	5,0	3,6	0,0	2,7	7,1		9,020		239. 55. 2,68	29,972	38,1	36,5	106,07	98. 22. 7,18	T.		
	α Pegasi R. ....	2. 38,8	43,4	46,0	39,0	43,0	44,0		16,916	-1	321. 34. 58,24				46,55	75. 34. 45,88	T.		
	α Pegasi. ....	1. 23,2	27,3	28,1	23,1	23,9	29,0		16,916	+1	217. 8. 41,22					75. 34. 46,20	T.		
	B. (w.) xxiii. 261	3. 1,3	5,7	7,9	1,1	4,0	7,7				238. 48. 5,80				101,44	97. 15. 5,67	T.		
	B. (w.) xxiii. 289	...	...	...	...	...	...		3,263		238. 50. 5,47				101,57	97. 17. 5,47	T.		
	(m) B. (w.) xxiii. 406	4. 2,0	4,6	8,3	0,4	2,7	7,8				234. 49. 5,87				87,08	93. 15. 51,38	T.		
	(m) B. (w.) xxiii. 409	...	...	...	...	...	...		10,881		234. 48. 26,63				87,04	93. 15. 12,10	T.		
	H. C. 1141. ....	3. 18,3	21,9	25,7	18,0	20,0	25,0				230. 18. 22,77	29,950	37,1	35,3	74,06	88. 44. 55,26	T.		
	Metis. ....	0. 45,9	50,1	49,5	44,7	47,9	52,0		8,970		233. 10. 49,28				82,13	91. 37. 29,84	T.		
	B.A.C. 270. ....	0. 23,0	27,1	26,1	21,9	23,6	29,6				225. 30. 25,37				62,58	83. 56. 46,38	T.		
	(n) Polaris R. ....	1. 34,9	41,9	41,3	35,6	37,3	41,6		13,036		35. 40. 13,19	29,944	37,1	35,0	44,22	1. 28. 0,16	T.		
	(n) Polaris R. ....	...	...	...	...	...	...		13,056		35. 40. 13,39					1. 27. 59,96	T.		
	(n) Polaris R. ....	...	...	...	...	...	...		13,108		35. 40. 12,75					1. 28. 0,60	T.		
	(n) Polaris. ....	3. 7,5	11,4	15,2	6,8	9,4	13,0		8,282		143. 3. 27,05					1. 28. 1,26	T.		
	(n) Polaris. ....	...	...	...	...	...	...		8,213		143. 3. 28,30					1. 28. 2,51	T.		
	(n) Polaris. ....	...	...	...	...	...	...		8,236		143. 3. 27,73					1. 28. 1,94	T.		
	(o) Euterpe. ....	3. 19,6	21,1	26,0	18,9	20,6	24,7				216. 3. 23,13	29,918	36,3	34,0	44,91	74. 29. 26,47	T.		
	Euterpe. ....	...	...	...	...	...	...		8,987	+1½	216. 3. 23,44					74. 29. 26,78	T.		
	(p) H. C. 6230. ....	0. 54,9	59,2	59,1	54,1	57,1	59,5				215. 30. 57,68				44,03	73. 57. 0,14	T.		
	(p) H. C. 6237. ....	...	...	...	...	...	...		7,752		215. 31. 23,71				44,04	73. 57. 26,18	T.		
	(q)(r) Irene B. ....	3. 47,3	50,7	53,9	46,8	49,3	51,3		7,992	+1	215. 54. 11,10	29,910	37,0	34,5	44,60	74. 20. 14,13	T.		
	(q) H. C. 8826. ....	...	...	...	...	...	...		12,202		215. 52. 44,56				44,56	74. 18. 47,55	T.		
Nov.21	(s) ☉ N.L. ....	0. 42,9	47,7	47,0	41,9	44,8	48,9		12,921		251. 14. 24,03	30,270	40,5	40,8	181,81	109. 42. 44,27	T.		
	☉ S.L. ....	3. 0,0	4,0	5,2	0,7	1,6	5,6		12,921		251. 46. 42,23				187,62	110. 15. 8,28	T.		
	(t) Zenith Point. ....	2. 2,9	7,4	10,7	4,0	6,0	7,1		9,843		179. 21. 49,57						T.		
	(a) Neptune. ....	4. 57,0	62,3	59,4	57,3	59,0	64,1				239. 54. 59,85	30,318	38,8	35,3	107,56	98. 22. 5,84	T.		
	α Pegasi R. ....	0. 42,8	48,3	46,9	43,2	45,3	49,9		11,233		321. 34. 59,79				47,20	75. 34. 44,98	T.		
	(a) α Pegasi. ....	4. 25,7	30,8	27,2	24,1	26,0	31,7		11,233		217. 8. 40,80					75. 34. 46,43	T.		
	(a) χ Aquarii. ....	4. 16,9	23,1	20,1	17,0	19,7	25,1				240. 4. 20,07				108,24	98. 31. 26,74	T.		

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) Quite alone: faint from mist, but observed satisfactorily. Reduction to wire-reading = +0",054. (c) 'Good: easy bisection with the micrometer-wire.' (d) Very faint. Reduction to wire-reading = +0",054. (e) The mercury disturbed by a south wind. (f) Too faint: the sky thick. (g) The rise of the Thermometer was probably owing to the south wind blowing through the north shutter-openings upon the Thermometer stand. (h) Disturbed mercury. (i) On the fixed wire: the coincidence reading was taken on the same day. (k) 'Good: the Planet quite alone.' This and the next Barometer reading have been increased 0",1 conjecturally. (l) Faint from misty cloud. Reduction to wire-reading = +0",054. (m) 'The south star precedes.' (n) Times by Molyneux, 0", 55", 10", 56", 13", 57", 3", 59", 2", 60", 2", and 60", 52". Molyneux slow on Hardy, 3", 47". Good observations: the star steadier and better defined in the reflection than in the direct observations. (o) 'Quite alone.' (p) 'About 13' apart.' (q) The recorded circle readings were 1" greater. (r) Reduction to wire-reading = 0",063. (s) Very unsteady. (t) The mercury tremulous.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	r.			
Nov. 21	B. (w.) XXIII. 285	1. 17,3	21,0	20,1	17,6	19,4	24,1	+11,5			240. 26. 20,43	30,318	38,8	35,3	109,87	98. 53. 28,73	T.
	B. (w.) XXIII. 294	...	...	...	...	...	...		14,980		240. 24. 15,69				109,71	98. 51. 23,83	T.
	(a)(b) B. (w.) XXIII. 406	4. 3,9	9,9	5,9	3,8	5,1	11,9				234. 49. 6,40	30,310	38,6	34,4	88,45	93. 15. 53,28	T.
	B. (w.) XXIII. 409	...	...	...	...	...	...		10,983		234. 48. 25,04				88,41	93. 15. 11,88	T.
	B. (w.) XXIII. 591	0. 32,7	37,9	34,9	32,4	33,5	39,7				232. 40. 35,38				81,76	91. 7. 15,57	T.
	(c) B. (w.) XXIII. 702	0. 47,9	51,1	50,4	46,2	50,8	52,6				241. 10. 50,53				113,46	99. 38. 2,42	T.
	B. (w.) XXIII. 713	...	...	...	...	...	...		8,343		241. 11. 4,23				113,48	99. 38. 16,14	T.
	B. (w.) XXIII. 808	3. 49,3	52,7	54,1	47,3	51,3	54,4		9,020	+2	229. 28. 52,58				72,93	87. 55. 23,94	T.
	B. (w.) XXIII. 980	1. 27,9	82,3	30,1	27,2	28,9	33,2				228. 51. 30,52			34,4	71,34	87. 18. 0,29	T.
	B. (w.) XXIII. 989	...	...	...	...	...	...		14,392		228. 49. 38,05				71,26	87. 16. 7,74	T.
	30 Piscium	2. 35,3	39,6	38,8	33,6	37,8	41,1				238. 22. 38,70				101,32	96. 49. 38,45	T.
	4 Ceti	3. 46,0	48,4	51,1	44,3	48,2	51,1		5,641		234. 54. 59,72				88,77	93. 21. 46,92	T.
	5 Ceti	...	...	...	...	...	...		23,055		234. 48. 56,48				88,44	93. 15. 43,35	T.
	(d) Metis	2. 39,5	42,5	43,8	38,5	41,3	46,0			+1½	233. 2. 42,97	30,316	37,7	33,7	83,01	91. 29. 24,41	T.
	(d) Metis	...	...	...	...	...	...		8,950	+1½	233. 2. 44,07					91. 29. 25,51	T.
	(d) Metis	...	...	...	...	...	...		8,965	+2½	233. 2. 43,79					91. 29. 25,33	T.
	(e) Euterpe	3. 57,0	59,8	63,7	57,1	59,1	63,0			+2	216. 9. 1,58	30,308	36,1	33,0	45,74	74. 35. 5,75	T.
Nov. 22	(a) Neptune	4. 55,0	60,0	60,8	54,7	57,6	61,7				239. 54. 58,28	30,181	37,9	32,8	107,64	98. 22. 4,35	B.
Dec. 1	(f) Neptune	4. 9,4	13,3	16,8	9,4	11,3	14,5	+11,6			239. 54. 14,08	30,021	42,8	39,4	105,54	98. 21. 18,84	B.
Dec. 2	(g) ☉ N.L.	0. 15,0	18,9	19,6	16,6	15,5	22,0		7,907		253. 15. 40,85	29,950	40,6	37,8	204,68	111. 44. 24,75	B.
	☉ S.L.	2. 39,0	43,4	44,2	39,6	40,7	42,2		7,907		253. 48. 5,35				211,94	112. 16. 56,51	B.
	Neptune	3. 59,5	64,0	66,1	60,5	62,2	65,1				239. 54. 4,47	29,914	39,3	33,8	106,40	98. 21. 10,09	B.
	(h) B.A.C. 201 R.	4. 2,8	6,0	11,8	4,1	4,0	7,4		8,225	+2½	1. 34. 22,46	29,909	38,3	32,5	2,33	35. 34. 31,99	B.
	H. C. 1619	4. 22,8	26,1	28,1	22,5	22,6	28,9				222. 49. 26,88				57,25	81. 15. 43,35	B.
	B. (w.) o. 863	...	...	...	...	...	...		7,486		222. 49. 59,50				57,27	81. 16. 15,99	B.
	μ Cassiopeiæ R.	1. 13,0	17,4	19,6	15,4	13,9	19,5		9,214	-¼	1. 21. 12,50				2,10	35. 47. 42,18	B.
	μ Cassiopeiæ	2. 26,6	31,9	33,9	28,1	27,6	31,3		9,214	+1½	177. 22. 26,96					35. 47. 44,08	B.
	(i) B. (w.) I. 110	4. 1,9	4,4	7,2	2,0	2,0	7,0				223. 34. 5,65			31,8	58,84	82. 0. 23,71	B.
	(k)(l) B. (w.) I. 182 B.	3. 40,1	43,4	45,8	41,5	40,4	44,8		5,370		221. 14. 59,07				54,27	79. 41. 12,56	B.
	(m) B. (w.) I. 274	3. 26,6	30,0	32,4	28,1	27,0	33,6				229. 18. 30,97				71,93	87. 45. 2,12	B.
	(n)(l) B. (w.) I. 376 B.	4. 7,3	10,7	13,3	8,9	7,6	13,4		4,319		222. 25. 48,71				56,55	80. 52. 4,48	B.
	(o) B. (w.) I. 928	3. 58,4	61,0	62,6	58,5	57,0	63,0				219. 54. 1,63	29,910	38,2	30,9	51,85	78. 20. 12,70	B.
	9 Persei R.	4. 7,6	12,3	16,6	10,6	8,6	13,0		8,208	+1	2. 19. 29,39				3,14	34. 49. 24,25	B.
	9 Persei	3. 49,1	51,4	57,0	49,2	50,0	53,2		8,208	+2½	176. 24. 11,02					34. 49. 27,10	B.
	B. (w.) II. 322	1. 41,3	45,8	45,1	42,5	43,6	49,6				223. 21. 45,32				58,53	81. 48. 3,07	B.
	B. (w.) II. 370	...	...	...	...	...	...		13,569		223. 20. 10,01				58,48	81. 46. 27,71	B.
	B. (w.) II. 454	0. 56,6	61,2	60,6	58,6	56,1	64,0				220. 50. 59,92	29,912	37,6	30,3	53,68	79. 17. 12,82	B.
	B. (w.) II. 461	...	...	...	...	...	...		2,447		220. 53. 16,61				53,75	79. 19. 29,58	B.
	H. C. 5010	2. 37,2	39,1	42,1	35,4	37,2	41,3				211. 57. 39,73				38,84	70. 23. 54,90	B.
	(q) H. C. 5152	3. 43,8	45,3	50,4	42,8	43,8	47,3				214. 53. 47,02				43,37	73. 19. 49,61	B.
	(q) H. C. 5164	...	...	...	...	...	...		12,110		214. 52. 42,15				43,34	73. 18. 44,71	B.
	(r)(l) B. (w.) II. 791 B.	1. 34,6	39,0	38,9	34,8	33,7	42,8		7,198		217. 52. 14,77				48,31	76. 18. 22,30	B.
	Euterpe	3. 57,0	59,6	64,6	56,4	57,5	61,4				216. 34. 0,97	29,920	37,4	29,8	46,16	75. 0. 6,35	B.
	Dec. 5	(s) ☉ S.L.	2. 18,0	22,4	23,5	20,3	19,4	24,1		8,435	+1½	254. 12. 33,71	29,875	41,2	41,6	215,47	112. 41. 28,40
(a) ☉ N.L.		4. 57,2	62,4	60,2	59,6	58,2	62,8		8,435	+2½	253. 40. 11,25				207,91	112. 8. 58,38	B.
Zenith Point		1. 59,9	66,1	67,5	62,1	63,6	65,3		9,773		179. 21. 48,78						B.
Dec. 9	☉ N.L.	2. 2,4	6,0	6,4	3,2	3,4	8,0		10,392		254. 6. 36,66	30,341	39,6	40,9	217,70	112. 35. 33,58	B.
	☉ S.L.	4. 25,5	29,8	32,8	26,1	26,4	30,6		10,392		254. 39. 1,21				225,82	113. 8. 6,25	B.
	(t) Euterpe	2. 23,0	26,6	27,9	24,2	22,8	27,4				216. 42. 26,23	30,360	39,6	33,2	46,73	75. 8. 32,18	B.
Dec. 12	(u) Neptune	1. 43,2	47,3	47,7	44,1	45,4	50,5	+12,2			239. 51. 47,10	29,801	37,0	31,2	106,42	98. 18. 52,81	B.
	γ Pegasi R.	3. 19,0	23,7	26,4	20,4	19,9	25,5		12,973		321. 32. 0,98	29,782	36,1	30,5	46,93	75. 37. 42,66	B.
	γ Pegasi	2. 54,3	56,8	59,2	53,2	55,1	59,2		12,973	+2¾	217. 11. 34,92					75. 37. 41,14	B.
	ρ Andromedæ R.	0. 25,2	31,4	31,6	29,1	28,6	32,8		13,574	+1½	344. 18. 54,54				16,26	52. 50. 18,43	B.
	ρ Andromedæ	1. 14,7	18,3	22,6	14,8	15,5	20,5		13,574	+2½	194. 24. 43,57					52. 50. 19,12	B.

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'South-preceding the next.' (c) The recorded circle reading was 1' greater. (d) Faint, but seen well enough for bisection with the micrometer-wire: three bisections for greater certainty. (e) 'Alone.' (f) The circle dripping with moisture. (g) N.L. steady, S.L. much diffused. (h) The direct observation missed. (i) 'One of Mag. 10.11 preceding by 20s.' (k) 'A brighter south-preceding.' (l) Reduction to wire-reading = +0",036. (m) 'Faint: a brighter north-following.' (n) 'The northern of two very faint.' (o) 'One of Mag. 5.6 south-preceding.' (p) The sky misty and star diffused. (q) 'Two faint stars between these.' (r) 'A brighter higher in the field.' (s) Unsteady. (t) 'Alone.' The circle reading has been increased conjecturally 10. (u) 'Only seen a few seconds.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.					
		A	B	C	D	E	F						Int.	Ext.		"	"	"		"	"	"	"	"
Dec.12	κ Cassiopeiae R...	2. 21,5	27,2	30,1	22,8	24,9	24,5	12,2	11,704	+ $\frac{1}{4}$	9. 16. 29,73	29,782	36,1	30,5	10,57	27. 52. 16,41			B.					
	κ Cassiopeiae.....	3. 0,4	3,3	8,4	1,3	2,5	5,8		11,704	+ $\frac{1}{2}$	169. 27. 9,09					27. 52. 17,81			B.					
	B. (w.) 0. 721 ...	0. 48,3	52,6	53,1	49,1	51,3	55,6				222. 30. 52,02	29,766	34,8	29,7	56,70	80. 57. 8,01			B.					
	B. (w.) 0. 738 ...	...	...	...	...	...	...		12,214		222. 29. 44,98				56,66	80. 56. 0,93			B.					
	(a)(b) Metis B.....	0. 48,2	53,2	53,1	49,2	51,4	55,6		9,872		230. 55. 33,52				76,15	89. 22. 8,96			B.					
	(a)(c) Euterpe B.....	2. 15,5	19,4	21,3	17,6	16,3	20,6		6,345		216. 43. 14,34	29,735	34,2	29,4	46,17	75. 9. 19,80			B.					
	Zenith Point.....	2. 16,3	22,2	24,6	19,1	20,2	21,7		10,578		179. 21. 48,71								B.					
Dec.14	⊙ S.L.....	1. 20,9	26,8	27,3	24,2	23,1	28,2		6,997		255. 2. 7,45	29,229	39,6	40,9	223,48	113. 31. 10,22			B.					
	⊙ N.L.....	3. 55,0	59,6	62,8	57,4	61,4	60,7		6,997		254. 29. 42,90				215,26	112. 58. 37,45			B.					
	(d) Neptune.....	1. 9,2	15,7	13,4	11,2	13,8	14,0				239. 51. 13,38	29,272	38,6	34,4	103,79	98. 18. 16,46			B.					
Dec.16	(e) ⊙ N.L.....	0. 11,9	18,0	16,6	13,7	13,3	19,1		8,188		254. 35. 32,47	29,351	34,2	24,8	225,27	113. 4. 37,03			B.					
	⊙ S.L.....	2. 39,5	44,3	45,1	40,5	42,3	45,4		8,188		255. 8. 0,89				233,94	113. 37. 14,12			B.					
Dec.20	Zenith Point.....	2. 29,9	35,3	38,7	31,7	33,8	35,6	+12,4	11,220		179. 21. 48,91								B.					
Dec.23	(f) ⊙ S.L.....	3. 12,6	16,0	19,3	14,1	14,1	18,2		6,429		255. 14. 10,70	29,781	37,2	40,6	231,08	113. 43. 20,87			B.					
	⊙ N.L.....	0. 48,1	53,5	54,2	51,5	53,2	55,1		6,429		254. 41. 46,60				222,50	113. 10. 48,19			B.					
	Neptune.....	2. 50,3	54,2	55,8	49,3	54,0	56,5		8,968		239. 47. 55,22	29,806	37,4	36,8	104,91	98. 14. 59,22			B.					
	(g) B. (w.) 0. 721 ...	0. 48,6	53,5	52,9	50,4	51,5	55,6				222. 30. 52,43	29,826	37,2	35,7	56,10	80. 57. 7,62			B.					
	(h)(i) Metis B.....	3. 29,0	33,4	35,4	30,5	31,2	36,4		7,486		229. 24. 5,20				71,37	87. 50. 35,66			B.					
Dec.27	(k) ⊙ N.L.....	1. 17,6	20,0	21,7	17,3	17,4	23,6	+12,8	13,212		254. 34. 52,31	29,836	33,5	28,7	226,87	113. 3. 57,16			T.					
	(l) ⊙ S.L.....	3. 41,1	47,9	44,7	42,6	43,8	50,3		13,212		255. 7. 16,67				235,58	113. 36. 30,23			T.					
	(m) B. (w.) II. 1033...	1. 43,8	47,3	48,0	43,7	45,5	51,0		9,586		218. 56. 35,10	29,838	31,0	28,4	50,27	77. 22. 43,35			T.					
	(l) B. (w.) III. 173...	4. 44,3	49,4	49,1	45,6	45,9	52,1				216. 54. 47,65				46,75	75. 20. 52,38			T.					
	(n) H. C. 6230.....	0. 50,0	55,0	55,1	50,9	52,9	58,9				215. 30. 54,18				44,44	73. 56. 56,60			T.					
	H. C. 6237.....	...	...	...	...	...	...		7,664		215. 31. 22,05				44,45	73. 57. 24,48			T.					
	B.A.C. 1079.....	3. 30,0	33,1	36,3	30,1	30,6	35,7				215. 18. 34,15				44,10	73. 44. 36,23			T.					
	H. C. 6839.....	3. 1,0	3,7	8,8	0,8	1,9	5,4				208. 23. 4,90	29,840	31,0	27,8	33,80	66. 48. 56,68			T.					
	H. C. 7001.....	0. 30,0	34,1	35,0	29,9	31,4	35,4				208. 45. 32,83				34,32	67. 11. 25,13			T.					
	(i) Irene B.....	2. 42,1	45,7	48,9	43,9	42,8	47,9		10,431		215. 22. 16,05				44,26	73. 48. 18,29			T.					
Dec.28	(o) ⊙ S.L.....	1. 9,0	11,2	14,0	8,2	8,4	16,0		13,961		255. 4. 28,15	29,850	30,9	29,4	234,55	113. 33. 40,68			T.					
	(p) Euterpe B.....	1. 48,7	51,9	55,4	49,1	50,9	57,1		14,444		216. 24. 58,48	30,110	27,2	23,0	46,87	74. 51. 3,33			T.					
	(q)(p)* R. 3 <sup>h</sup> . 1 <sup>m</sup> . 42 <sup>s</sup> B.	...	...	...	...	...	...		9,395		216. 26. 43,80				46,92	74. 52. 48,70			T.					
	(q)(p)* R. 3 <sup>h</sup> . 7 <sup>m</sup> . 16 <sup>s</sup> B.	2. 1,0	4,1	7,3	2,0	2,4	8,4		8,919		216. 12. 5,83				46,51	74. 38. 10,32			T.					
	(p) Irene B.....	3. 45,7	48,3	53,5	46,9	46,1	50,5		4,659		215. 20. 19,74	30,140	25,7	21,8	45,23	73. 46. 22,95			T.					
Dec.29	(r) ⊙ N.L.....	0. 27,9	31,6	32,7	28,0	26,9	35,5		14,805		254. 28. 29,56	30,190	27,4	19,0	232,78	112. 57. 40,32			T.					
	⊙ S.L.....	2. 53,0	56,0	60,4	54,1	53,7	61,5		14,805		255. 0. 56,61				241,67	113. 30. 16,26			T.					
	(p)(s) Irene B.....	3. 47,7	48,2	54,0	46,9	47,3	54,0		11,505		215. 17. 58,13	30,012	22,3	19,5	45,19	73. 44. 1,30			T.					
Dec.30	(p) Euterpe B.....	1. 16,2	18,8	21,7	15,7	16,9	24,4		13,323		216. 19. 48,39	29,560	28,0	27,0	45,48	74. 45. 51,85			T.					
	(t) * R. 3 <sup>h</sup> . 1 <sup>m</sup> . 42 <sup>s</sup> ...	2. 37,0	40,7	43,1	37,1	38,6	44,9		11,538		216. 26. 48,43				45,68	74. 52. 52,09			T.					
	(q) * R. 3 <sup>h</sup> . 7 <sup>m</sup> . 16 <sup>s</sup> ...	2. 55,9	58,3	63,2	56,8	57,3	63,0		11,450		216. 12. 9,24				45,27	74. 38. 12,49			T.					
	(p) Irene B.....	0. 22,1	27,6	27,9	23,8	23,9	21,4		8,331		215. 15. 37,64	29,566	28,0	27,0	43,75	73. 41. 39,37			T.					
Dec.31	(l) ⊙ S.L.....	4. 43,5	49,1	48,1	44,9	45,5	52,1		13,966		254. 53. 3,53	29,540	31,6	30,9	228,30	113. 22. 9,81			T.					
	⊙ N.L.....	2. 17,1	20,9	23,9	18,0	19,3	25,7		13,966		254. 20. 38,23				219,97	112. 49. 36,18			T.					
	(u) * R. 3 <sup>h</sup> . 1 <sup>m</sup> . 42 <sup>s</sup> ...	1. 50,4	53,9	56,6	51,1	53,6	57,9		9,391		216. 26. 46,57	29,450	28,3	28,0	45,41	74. 52. 49,96			T.					
	(x) Irene B.....	1. 5,9	9,0	12,1	6,2	6,0	13,5		5,687		215. 13. 9,33	29,444	28,0	27,3	43,48	73. 39. 10,79			T.					
	B. (w.) IV. 103...	1. 45,2	46,8	49,8	41,8	44,8	50,0		4,372		217. 23. 23,71				47,04	75. 49. 28,73			T.					
	(y) B. (w.) IV. 105...	...	...	...	...	...	...		17,620		217. 18. 47,37				46,91	75. 44. 52,26			T.					
	(l) H. C. 8122.....	4. 5,1	9,6	8,9	5,0	5,7	14,1				213. 39. 7,68				41,03	72. 5. 6,69			T.					
	(l) v <sup>s</sup> Tauri.....	4. 12,3	17,4	17,1	11,7	12,9	19,3			+2	208. 54. 15,05				34,10	67. 20. 7,13			T.					
	H. C. 8541.....	1. 51,9	53,8	56,9	51,2	53,1	58,0				212. 31. 54,97				39,33	70. 57. 52,28			T.					

ONE REVOLUTION of the MICROMETER = 20",859. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

N. B. The Zenith Point used Dec. 27—31 is 179°. 21'. 50",02, which was taken Jan. 3, 1854.

(a) Reduction to wire-reading = + 0",020. (b) 'Very good.' (c) The only object seen. Cloudy, and the Moon full and near. (d) Cloudy.  
 (e) Very unsteady and serrated. (f) Tremulous and badly defined. (g) Doubtful observation, the star being extremely faint. (h) 'Another object  
 north-following.' (i) Reduction to wire-reading = + 0",024. (k) Great motion. (l) Negative correction for Runs. (m) Badly defined, the observer thought it  
 seemed double, and unsteady. (n) 'The north-preceding star.' (o) Much clouded. (p) Reduction to wire-reading = + 0",045. (q) Very faint. (r) Fringed  
 cloud, and the bisection doubtful. (s) The preceding object. See the transit observation. (t) Sufficiently bright for bisecting well with the wire. (u) Very faint from  
 brighter star. (x) The recorded circle reading was 1' greater. Reduction to wire-reading = + 0",048. (y) 'The following and



MEAN NORTH POLAR DISTANCES, JAN. 1, 1853,

OF THE STARS

OBSERVED IN THE YEAR 1853,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND THE

CONCLUDED MEAN NORTH POLAR DISTANCES,

JANUARY 1, 1853;

WITH THE ANNUAL VARIATIONS.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
1	4 Ceti .....	Nov. 21	7	+13,97	0,89	0. 0. 12	1	93.22. 1,98	-20,05	
2	5 Ceti .....	21	7	+14,01	57,36	0. 0. 40	1	93.15. 58,45	20,05	
3	$\alpha$ Andromedæ .....	Sept. 23		+15,16	15,23					
4	—	Nov. 3		+21,46	15,01					
5	—	9		+22,00	14,71	0. 0. 48	5	61.43. 16,14	20,05	
6	—	10		+22,07	14,78					
7	—	18		+22,60	15,56					
8	$\alpha$ Andromedæ R. ...	Sept. 23		+15,16	16,30					
9	—	Nov. 3		+21,46	15,92					
10	—	9		+22,00	15,40		5	61.43. 15,35		
11	—	10		+22,07	15,43					
12	—	18		+22,60	15,47					
13	B. (w.) o. 73. ....	Oct. 28	9	+15,20	5,03	0. 4. 34	1	94.49. 6,16	20,05	
14	$\gamma$ Pegasi .....	Dec. 12		+18,65	59,79	0. 5. 40	1	75.38. 0,06	20,05	
15	$\gamma$ Pegasi R. ....	12		+18,65	61,31		1	75.38. 1,79		
16	B. (w.) o. 164. ....	Nov. 9		+15,65	1,27	0. 9. 57	1	90.30. 2,27	20,04	
17	B. (w.) o. 174. ....	9	9 $\frac{1}{4}$	+15,67	33,80	0.10. 19	1	90.26. 34,80	20,03	
18	$\rho$ Andromedæ .....	10		+23,47	45,13					
19	—	Dec. 12		+25,61	44,73	0.13. 23	2	52.50. 45,64	20,02	
20	$\rho$ Andromedæ R. ...	Nov. 10		+23,47	44,87					
21	—	Dec. 12		+25,61	44,04		2	52.50. 44,50		
22	B. (w.) o. 279. ....	Nov. 18	8	+15,18	39,68	0.16. 18	1	90.41. 40,68	20,00	
23	45 Piscium .....	9	7.8	+17,49	18,08	0.18. 7	1	83. 7. 18,64	19,99	
24	B.A.C. 113. ....	18	6.7	+16,53	13,11	0.22. 35	1	85.57. 13,88	19,96	
25	B. (w.) o. 382. ....	9	9.10	+16,81	53,57	0.23. 13	1	86. 7. 54,35	19,95	
26	H. C. 745. ....	18	8 $\frac{1}{4}$	+16,53	55,61	0.24. 16	1	85.57. 56,38	19,94	
27	$\kappa$ Cassiopeiæ .....	Sept. 23		+10,56	49,32					
28	—	Dec. 12		+30,66	48,47	0.24. 41	2	27.52. 48,55	19,94	
29	$\kappa$ Cassiopeiæ R. ....	Sept. 23		+10,56	48,09					
30	—	Dec. 12		+30,66	47,07		2	27.52. 48,68		
31	$\delta$ Andromedæ .....	Nov. 9		+21,84	37,00	0.31. 29	1	59.56. 38,04	19,87	
32	$\delta$ Andromedæ R. ...	9		+21,84	36,72		1	59.56. 36,42		
33	$\alpha$ Cassiopeiæ .....	Sept. 23		+10,99	10,61	0.32. 12	1	34.16. 10,46	19,86	
34	$\alpha$ Cassiopeiæ R. ....	23		+10,99	9,56		1	34.16. 10,45		
35	B. (w.) o. 612. ....	Nov. 18	9 $\frac{1}{4}$	+17,53	57,49	0.35. 27	1	82.13. 57,97	19,81	
36	H. C. 1141. ....	19	8.9	+15,79	11,05	0.35. 44	1	88.45. 11,96	19,81	
37	$\beta$ Ceti .....	10		+11,42	38,16	0.36. 12	1	108.47. 39,37	19,81	
38	$\beta$ Ceti R. ....	10		+11,42	37,13		1	108.47. 36,66		
39	B.A.C. 201 R. ....	Dec. 2		+38,96	10,95	0.36. 57	1	35.35. 11,80	19,79	
40	B. (w.) o. 721. ....	12	9.10	+16,99	25,00					
41	—	23	10.11	+16,39	24,01	0.41. 49	2	80.57. 24,88	19,72	
42	B. (w.) o. 738. ....	12	9	+16,98	17,91	0.42. 42	1	80.56. 18,28	19,71	
43	B. (w.) o. 828. ....	Oct. 28	9	+16,40	4,35	0.48. 34	1	91.11. 5,38	19,61	
44	H. C. 1619. ....	Dec. 2	9	+17,29	0,64	0.49. 33	1	81.16. 1,04	19,59	
45	B. (w.) o. 863. ....	2	9	+17,29	33,28	0.49. 50	1	81.16. 33,68	19,58	
46	B.A.C. 270. ....	Nov. 19	7	+17,02	3,40	0.50. 42	1	83.57. 4,02	19,57	
47	$\mu$ Cassiopeiæ .....	Dec. 2		+27,43	11,51	0.58. 30	1	35.48. 11,41	19,41	
48	$\mu$ Cassiopeiæ R. ....	2		+27,43	9,61		1	35.48. 10,44		
49	Polaris. ....	April 26		- 8,07	28,80					
50	—	May 4		-10,27	28,56					
51	—	Sept. 23		+ 3,73	26,15					
52	—	Oct. 3		+ 7,53	25,70					
53	—	25		+16,03	24,50	1. 5. 54	8	1.28. 25,98	-19,23	
54	—	28		+17,23	25,04					
55	—	Nov. 16		+23,93	24,50					
56	—	19		+24,93	26,83					
57	Polaris R. ....	April 26		- 8,07	25,50					
58	—	May 4		-10,27	24,73					
59	—	Sept. 23		+ 3,73	26,01					
60	—	Oct. 3		+ 7,53	25,79					
61	—	25		+16,03	24,64		8	1.28. 26,20		
62	—	28		+17,23	26,36					
63	—	Nov. 16		+23,93	25,01					
64	—	19		+24,93	25,17					
65	Polaris SP. ....	April 27		- 8,22	26,70					
66	—	Oct. 3		+ 7,38	29,26					
67	—	17		+13,13	29,11					
68	—	21		+14,73	29,62		6	1.28. 28,67		
69	—	25		+16,23	29,94					
70	—	30		+18,13	28,43					

No. 43. This is No. 33 in p. 212 of Vol. xviii. the N.P.D. of which should be 91°. 12'. Bessel's R.A. is 1<sup>m</sup> too small, as are also the R.A. of B. (w.) o. 805 and 842. This was ascertained by equatorial comparisons with 20 Ceti Oct. 24, 1859.

No. 49. The mean from two bisections.

N. B. In calculating the concluded N.P.D. of Polaris, weights are given to the N.P.D. of the several days proportional to the number of bisections.

No. 51. Two bisections.

No. 52. Four bisections.

No. 53. Three bisections.

No. 54. Three bisections.

No. 55. Two bisections.

No. 56. Three bisections.

No. 57. Two bisections.

No. 59. Two bisections.

No. 60. Four bisections.

No. 61. Three bisections.

No. 62. Three bisections.

No. 63. Two bisections.

No. 64. Three bisections.

No. 65. Two bisections.

No. 66. Three bisections.

No. 67. Three bisections.

No. 68. Three bisections.

No. 69. Two bisections.

No. 70. Three bisections.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
71	Polaris SP. R.....	Apr. 27		- 8.22	29.91					No. 71. Two bisections. No. 72. Three bisections. No. 73. Three bisections. No. 74. Two bisections. No. 75. Three bisections.
72	—	Oct. 17		+ 13.13	29.91					
73	—	21		+ 14.73	29.20		5	1.28.29.06		
74	—	25		+ 16.23	29.20					
75	—	30		+ 18.13	29.65					
76	B. (w.) I. 110.....	Dec. 2	9	+ 16.93	40.64	1. 7.57	1	82. 0.41.10	-19.18	Nos. 77—79. These magnitudes seem to have been estimated as they appeared in a misty sky. See the observer's note to the observation of 9 Persei on the same night.
77	B. (w.) I. 182.....	2	10.11	+ 17.52	30.08	1. 12. 9	1	79. 41.30.37	19.07	
78	B. (w.) I. 274.....	2	10	+ 15.23	17.35	1. 17. 5	1	87. 45.18.22	18.93	
79	B. (w.) I. 376.....	2	11	+ 17.07	21.55	1. 22.24	1	80. 52.21.91	18.77	
80	B. (w.) I. 667.....	Jan. 3	8	- 4.84	13.23	1. 36.28	1	81. 15.13.62	18.30	
81	B. (w.) I. 830.....	3	9	- 4.36	58.78	1. 46.12	1	80. 5.59.10	17.94	
82	B. (w.) I. 928.....	Dec. 2		+ 17.06	29.76	1. 52.25	1	78. 20.30.01	17.69	
83	B. (w.) I. 948.....	Jan. 7	8.9	- 3.23	20.17	1. 53.20	1	76. 25.20.42	17.65	
84	B. (w.) I. 1070....	7	9	- 5.97	16.80	1. 59.43	1	84. 29.17.47	17.38	
85	B. (w.) II. 15.....	3	8.9	- 2.68	40.39	2. 2.31	1	75. 32.40.66	17.26	
86	9 Persei.....	Dec. 2		+ 23.35	50.45	2. 12. 8	1	34. 49.50.32	16.81	
87	9 Persei R.....	2		+ 23.35	47.60		1	34. 49.48.48		
88	B. (w.) II. 240.....	Jan. 7	7.8	- 4.20	7.73	2. 15.22	1	79. 50. 8.03	16.66	
89	B. (w.) II. 319.....	7	7.8	- 3.60	25.62	2. 19.53	1	78. 12.25.87	16.44	
90	B. (w.) II. 322.....	Dec. 2	9.10	+ 15.54	18.61	2. 19.56	1	81. 48.19.05	16.43	
91	B. (w.) II. 333.....	Oct. 20		+ 12.66	8.91	2. 20.27	1	84. 36. 9.59	16.40	
92	B. (w.) II. 370.....	Dec. 2	8.9	+ 15.48	43.19	2. 22.23	1	81. 46.43.63	16.31	
93	B.A.C. 782.....	Jan. 7	7.8	- 1.41	15.98	2. 25.23	1	71. 46.16.57	16.16	
94	B. (w.) II. 454.....	Dec. 2	9.10	+ 15.80	28.62	2. 27.29	1	79. 17.28.90	16.04	
95	B. (w.) II. 461.....	2	9	+ 15.78	45.36	2. 27.43	1	79. 19.45.64	16.03	
96	ν Ceti.....	Nov. 16		+ 15.46	1.39	2. 28.10	1	85. 3. 2.11	16.01	No. 112. The N.P.D. of H. C. is 1' too great. See No. 115 in p. 263 of Vol. XVIII.
97	ν Ceti R.....	16		+ 15.46	1.96		1	85. 3. 1.98		
98	H. C. 4925.....	Jan. 8	8	- 2.10	25.48	2. 32. 0	1	73. 54.25.85	15.80	
99	H. C. 5010.....	Dec. 2	7	+ 17.11	54.90	2. 34.43	1	70. 23.55.63	15.66	
100	B. (w.) II. 650.....	Jan. 14		- 4.30	50.60	2. 37.37	1	79. 48.50.90	15.49	
101	H. C. 5152.....	Dec. 2	9	+ 16.41	6.02	2. 39. 8	1	73. 20. 6.44	15.41	
102	H. C. 5164.....	2	9	+ 16.40	1.11	2. 39.30	1	73. 19. 1.53	15.39	
103	π Arietis.....	Jan. 8	6.7	- 1.78	0.16	2. 41. 6	1	73. 9. 0.59	15.30	
104	B. (w.) II. 746.....	14	9½	- 3.31	55.78	2. 43.27	1	77. 6.56.02	15.16	
105	B. (w.) II. 791.....	Dec. 2	10	+ 15.61	37.91	2. 45.56	1	76. 18.38.16	15.02	
106	ρ³ Arietis.....	Jan. 14	6	- 1.74	57.63	2. 48. 9	1	72. 33.58.13	14.89	
107	B. (w.) II. 947.....	14	9.10	- 3.33	44.93	2. 53.50	1	77. 32.45.17	14.56	
108	α Ceti.....	8		- 5.92	23.25	2. 54.36	2	86. 29.23.71	14.51	
109	—	Nov. 16		+ 14.52	22.57					
110	α Ceti R.....	16		+ 14.52	22.36		1	86. 29.22.28		
111	B. (w.) II. 1033....	Dec. 27		+ 14.24	57.59	2. 58.20	1	77. 22.57.83	14.28	No. 130. The N.P.D. of this star was verified Oct. 22, 1859. B. z. 391, 3h. 19m. 30s is the same star.
112	H. C. 5771.....	Jan. 22	8	- 2.25	35.14	2. 59.51	1	73. 38.35.53	14.19	
113	*.....	Dec. 28		+ 14.74	3.44					
114	—	30		+ 14.68	6.77	3. 1.42	3	74. 53. 5.23	14.08	
115	—	31		+ 14.65	4.61					
116	B. (w.) III. 119....	Jan. 22	8	- 3.07	43.81	3. 7.11	1	76. 14.44.07	13.73	
117	*.....	Dec. 28		+ 14.52	24.84	3. 7.16	2	74. 38.26.21	13.72	
118	—	30		+ 14.47	26.96					
119	B. (w.) III. 173....	27	8.9	+ 14.21	6.59	3. 10.16	1	75. 21. 6.86	13.53	
120	H. C. 6141.....	Jan. 8	7.8	- 0.80	49.85	3. 11.58	2	70. 39.50.79	13.42	
121	—	22	7½	- 1.11	50.32					
122	H. C. 6230.....	Nov. 19		+ 14.51	14.65	3. 14.50	2	73. 57.13.15	13.23	
123	—	Dec. 27	9	+ 14.33	10.93					
124	H. C. 6237.....	Nov. 19		+ 14.48	40.66	3. 15. 3	2	73. 57.40.09	13.22	
125	—	Dec. 27	9	+ 14.32	38.80					
126	H. C. 6247.....	Jan. 22	8½	- 2.14	19.18	3. 15.36	1	73. 48.19.56	13.18	No. 130. The N.P.D. of this star was verified Oct. 22, 1859. B. z. 391, 3h. 19m. 30s is the same star.
127	B. (w.) III. 306....	8	9	- 2.65	2.53	3. 17.34	1	76. 54. 2.77	13.06	
128	ξ Tauri.....	Nov. 16		+ 14.08	59.00	3. 19.12	1	80. 46.59.36	12.95	
129	ξ Tauri R.....	16		+ 14.08	58.59		1	80. 46.58.99		
130	H. C. 6389.....	Jan. 22	7.8	- 0.78	20.62	3. 20.19	1	69. 53.21.40	12.87	
131	B.A.C. 1079.....	Dec. 27	9	+ 14.05	50.28	3. 21.25	1	73. 44.50.66	12.79	
132	f Tauri.....	Jan. 8	6	- 2.80	12.17	3. 22.46	1	77. 34.12.41	12.70	
133	B.A.C. 1096.....	7	7	- 1.30	7.49	3. 25.46	1	72. 39. 7.98	12.50	
134	B. (w.) III. 495....	22	9½	- 2.86	59.52	3. 27.18	1	76. 18.59.77	12.39	
135	9 Tauri.....	8	8	+ 0.24	41.15	3. 28.20	1	67. 16.42.13	12.32	
136	B. (w.) III. 569....	5	8	- 2.32	13.87	3. 31. 7	1	76. 35.14.12	12.13	
137	B. (w.) III. 603....	7	7.8	- 2.48	36.04	3. 32.24	1	76. 55.36.28	12.05	
138	B. (w.) III. 624....	7	9	- 2.48	58.25	3. 33.20	2	76. 56.59.60	-11.98	
139	—	22	9½	- 3.00	60.47					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
140	H. C. 6839.....	Dec. 27	8.9	+ 14,86	11,54	3.35. 0	1	66.49.12,55	-11,86	
141	17 Tauri.....	Jan. 8	5.6	+ 0,52	7,16	3.36. 8	1	66.21. 8,18	11,78	
142	*.....	5	8	+ 0,38	55,41	3.38.35	1	66.43.56,42	11,60	
143	η Tauri.....	Nov. 16		+ 13,03	10,27	3.38.45	1	66.21.11,29	11,59	
144	η Tauri R.....	16		+ 13,03	10,69		1	66.21.10,41		
145	B. (w.) III. 724.....	Jan. 22	9	- 2,63	23,06	3.39. 3	1	76. 3.23,32	11,57	
146	B. (w.) III. 737.....	7	8.9	- 2,18	53,04					
147	—	22	9	- 2,65	54,67	3.39.32	2	76. 5.54,12	11,54	
148	H. C. 7001.....	Dec. 27	9.10	+ 14,45	39,58	3.40. 4	1	67.11.40,57	11,50	
149	H. C. 7033.....	Jan. 5	8	+ 0,39	55,42	3.41. 0	1	66.43.56,43	11,43	
150	B.A.C. 1186.....	8	8	+ 0,41	21,36	3.41. 1	1	66.44.22,37	11,43	
151	H. C. 7102.....	6	8	- 0,04	52,16					
152	—	7	7	- 0,05	52,82	3.42.58	2	68.24.53,40	11,29	
153	ζ Persei.....	Nov. 16		+ 12,44	23,61	3.44.54	1	58.33.24,60	11,15	
154	ζ Persei R.....	16		+ 12,44	25,02		1	58.33.24,74		
155	B. (w.) III. 878.....	Jan. 22	8.9	- 2,31	21,11	3.45.32	1	75.15.21,38	11,11	
156	B. (w.) III. 884.....	5	9.10	- 1,84	46,32					
157	—	22	8.9	- 2,31	47,62	3.45.48	2	75.17.47,24	11,08	
158	H. C. 7230.....	7	7.8	- 0,38	41,88	3.47.31	1	69.39.42,68	10,96	
159	B. (w.) III. 959.....	6	10	- 1,70	59,32					
160	—	8	7.8	- 1,76	57,86	3.49.41	2	74.47.58,89	10,80	
161	H. C. 7434.....	5	8	+ 0,42	25,97	3.53.35	1	67.59.26,91	10,50	
162	H. C. 7480.....	22	7.8	- 0,34	17,98	3.55.20	1	69.20.18,82	10,38	
163	H. C. 7712.....	22	8	+ 0,60	32,45	4. 1.29	1	66.24.33,47	9,91	
164	H. C. 7759.....	7	8.9	+ 0,69	52,15	4. 3. 0	1	65.32.53,19	9,80	
165	B. (w.) IV. 103.....	Dec. 31	9	+ 10,80	39,53	4. 6. 3	1	75.49.39,79	9,57	
166	B. (w.) IV. 105.....	31	8.9	+ 10,82	3,08	4. 6. 8	1	75.45. 3,34	9,56	
167	H. C. 7904.....	Jan. 5	8	+ 0,47	44,22					
168	—	7	8	+ 0,51	43,77	4. 6.35	3	66.17.45,31	9,52	
169	—	22	8	+ 0,65	44,87					
170	H. C. 8051.....	6	8	+ 0,41	18,95	4.10.57	2	66.37.19,71	9,18	
171	—	7	8	+ 0,42	18,44					
172	H. C. 8058.....	7	9	+ 0,43	4,68	4.11. 3	1	66.36. 5,69	9,18	
173	H. C. 8122.....	5	8	- 0,88	17,16					
174	—	22	7.8	- 1,08	17,35	4.12.54	3	72. 5.18,01	9,04	
175	—	Dec. 31	8½	+ 11,14	17,83					
176	H. C. 8249.....	Jan. 8	8	- 1,18	52,63	4.15.55	1	73.15.53,06	8,79	
177	δ <sup>3</sup> Tauri.....	22		- 1,16	45,02	4.16.59	1	72.24.45,54	8,71	
178	δ <sup>2</sup> Tauri.....	Dec. 31	6	+ 11,69	18,82	4.18.30	1	67.20.19,80	8,59	
179	H. C. 8434.....	Jan. 6	8	+ 0,37	13,77					
180	—	8	8	+ 0,39	13,44	4.21.32	3	66.44.14,55	8,36	
181	—	22	8	+ 0,58	13,42					
182	H. C. 8541.....	Dec. 31	8	+ 10,51	2,79	4.24.25	1	70.58. 3,46	8,12	
183	Aldebaran.....	Jan. 8		- 1,25	24,88					
184	—	Nov. 8		+ 10,28	26,46	4.27.29	2	73.47.26,05	7,88	
185	Aldebaran R.....	Jan. 8		- 1,25	23,60					
186	—	Nov. 8		+ 10,28	24,49		2	73.47. 4,42		
187	H. C. 8654.....	Jan. 6	8.9	- 0,47	44,30	4.27.58	1	70.32.45,02	7,84	
188	*.....	7	8.9	+ 0,16	29,47	4.29.18	1	67.40.30,43	7,73	
189	H. C. 8826.....	Nov. 1		+ 10,09	57,09					
190	—	3		+ 10,08	57,55					
191	—	16		+ 10,01	55,50					
192	—	17		+ 10,00	55,59	4.33.46	6	74.18.56,98	7,36	
193	—	18		+ 10,00	56,57					
194	—	19		+ 9,99	57,54					
195	H. C. 8917.....	Jan. 6	9.10	+ 0,86	10,18	4.37.10	1	64.14.11,26	7,09	
196	B. (w.) IV. 896.....	6	10	- 1,32	41,83	4.41.35	1	74.43.42,13	6,72	
197	H. C. 9220.....	Feb. 2		+ 0,85	7,53	4.47.12	1	66.14. 8,55	6,27	
198	H. C. 9411.....	Jan. 5	8	- 1,17	35,15					
199	—	6	9	- 1,20	36,51	4.52.56	2	74.28.36,15	5,78	
200	*.....	8	9	+ 0,89	2,65	4.56.12	1	63.47. 3,73	5,51	
201	η Aurigæ.....	Feb. 2		+ 5,98	8,63	4.56.13	1	48.58. 9,13	5,51	
202	η Aurigæ R.....	2		+ 5,98	11,15		1	48.58.11,39		
203	H. C. 9517.....	Jan. 5	8	- 0,69	17,87					
204	—	7	7.8	- 0,71	18,40	4.56.16	2	71.57.18,71	5,50	
205	B.A.C. 1562.....	8	7.8	+ 0,87	34,56					
206	B.A.C. 1577.....	6	8	+ 1,12	25,09	4.56.47	1	63.46.35,64	5,46	
207	—	7		+ 0,36	25,44	4.59.21	2	61.55.26,36	5,25	
208	H. C. 9704.....	5	8	+ 1,18	42,14	5. 2. 3	1	61.11.43,21	-5,02	

No. 142. The R.A. depends on an equatorial comparison with B.A.C. 1186 made Oct. 21, 1859.

Nos. 145 and 146. By equatorial observations Oct. 21 and 22, 1859, it was found that the R.A. of B. (w.) III. 724, 727 and 737 are each 1<sup>m</sup> too small, and the N.P.D. of the last star was verified. See the observer's note to the observation of No. 145.

Nos. 159 and 160. No circumstances accounting for the different estimation of magnitudes on these days were noted by the observer. Bessel's Mag. is 9.

No. 161. This is B. z. 393, 3<sup>h</sup>. 52<sup>m</sup>. 48<sup>s</sup>.

No. 172. The N.P.D. of H. C. is about 15'' less. See the note to No. 118 in p. 391 of Vol. xviii.

No. 183. I found the R.A. on Oct. 21, 1859, by equatorial comparison with H. C. 8730, and considered the Mag. to be 9.

No. 200. The R.A. depends on an equatorial comparison with B.A.C. 1562 on Oct. 21, 1859.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
209	H. C. 9786.....	Feb. 17	8	+ 1,70	29,61	5. 5.26	1	64.15.30,68	- 4,72	
210	Capella.....	Jan. 8		+ 4,16	23,82	5. 5.50	1	44. 9.24,05	4,70	
211	Capella R.....	8		+ 4,16	25,51		1	44. 9.26,00		
212	H. C. 9809.....	Feb. 17	8	+ 1,72	48,52	5. 6.55	1	64.12.49,60	4,60	
213	H. C. 9872.....	2	9	+ 2,11	16,26	5. 9.28	1	62. 4.17,35	4,38	
214	H. C. 9929.....	Jan. 5	9	+ 0,48	1,85	5.11.16	1	64.59. 2,91	4,23	
215	H. C. 10007.....	Feb. 2	9	+ 2,38	21,71	5.13.41	1	61. 3.22,78	4,03	
216	H. C. 10080.....	17	9	- 0,22	30,58	5.15.15	1	70. 8.31,34	3,88	
217	B.A.C. 1703.....	17	8	- 1,37	14,80	5.19.41	1	73.41.15,19	3,51	
218	H. C. 10252.....	17	9	- 1,38	57,07	5.20.21	1	73.41.57,46	3,45	
219	H. C. 10390.....	2	8	+ 1,08	45,21	5.24.30	1	65.28.46,26	3,09	
220	H. C. 10570.....	2	9	+ 2,13	49,60	5.29.41	1	61.37.50,68	2,65	
221	H. C. 10679.....	2	9	+ 1,51	17,80	5.32.43	1	63.49.18,88	2,39	
222	H. C. 10686.....	2	9	+ 1,51	58,40	5.32.50	1	63.47.59,48	2,37	
223	H. C. 10720.....	22	8.9	- 1,34	45,20	5.33.12	1	73.50.45,58	2,34	
224	H. C. 10889.....	2	9	+ 0,30	59,63	5.38.20	2	68.11. 1,16	1,89	
225	-----	22	9	+ 0,59	60,83					
226	H. C. 10917.....	14	8	+ 2,20	30,53	5.39.36	1	62.41.31,62	1,78	No. 226. The R.A. of H. C. is 30° too small, by a circle transit of the star taken on this day. See note to No. 89 in p. 49.
227	H. C. 10977.....	Jan. 6	8	- 0,21	2,44	5.40.23	1	68.55. 3,32	1,72	
228	H. C. 11070.....	6	8	- 0,41	21,23					
229	-----	Feb. 2	8	- 0,33	19,83	5.43.11	3	70.31.21,12	1,47	
230	-----	22	8	- 0,15	20,13					
231	α Orionis.....	14		- 3,87	26,84	5.47.13	1	82.37.27,35	1,12	
232	α Orionis R.....	14		- 3,87	28,80		1	82.37.29,02		
233	H. C. 11200.....	2	9½	- 0,40	8,35	5.47.55	2	70.47. 8,00	1,05	
234	-----	22	9½	- 0,23	6,26					
235	H. C. 11213.....	2	8	- 0,40	28,70	5.48.28	2	70.48.28,76	1,01	
236	-----	22	8.9	- 0,22	27,43					
237	H. C. 11281.....	Mar. 1	9	+ 0,70	36,79	5.50.30	1	68.15.37,71	0,83	
238	H. C. 11384.....	Feb. 22	8	- 0,94	29,37	5.53. 8	1	73. 4.29,81	0,60	
239	H. C. 11413.....	14	8.9	+ 0,67	3,16	5.54.13	1	67.38. 4,12	0,51	
240	H. C. 11421.....	14	8.9	+ 0,66	38,88	5.54.20	1	67.39.39,84	0,50	
241	ν Orionis.....	2		- 1,50	6,43	5.59.11	2	75.13. 6,15	- 0,07	
242	-----	Mar. 1		- 1,59	5,31					
243	ν Orionis R.....	Feb. 2		- 1,50	6,39		2	75.13. 6,90		
244	-----	Mar. 1		- 1,59	6,47					
245	H. C. 11627.....	Feb. 14	8¾	+ 2,10	15,50	6. 0.14	1	62.47.16,59	+ 0,02	No. 245. The N.P.D. agrees with that of B. z. 405, 5h. 59m. 22s, which is the same star. The N.P.D. by H. C. is 62°. 46'. 54", 5.
246	H. C. 11752.....	14	8.9	- 0,69	12,47	6. 3.24	2	72.12.13,83	0,29	
247	-----	22	8.9	- 0,63	14,09					
248	H. C. 11756.....	14	9	- 0,69	45,80	6. 3.32	2	72.12.47,11	0,31	
249	-----	22	8.9	- 0,63	47,31					
250	H. C. 11839.....	16	7	- 0,62	22,91	6. 5.53	1	72. 3.23,47	0,51	
251	f² Orionis.....	Mar. 1	6	- 1,07	58,95	6. 6.57	1	73.48.59,33	0,61	
252	H. C. 12007.....	Feb. 14	7.8	- 0,80	18,05	6.10.29	2	72.37.19,39	0,92	
253	-----	Mar. 1	8	- 0,66	19,73					
254	H. C. 12053.....	Feb. 16	8½	+ 0,32	1,68	6.11.45	1	68.51. 2,56	1,04	
255	H. C. 12158.....	14	8.9	+ 0,83	47,34	6.14.37	2	66.50.48,56	1,28	
256	-----	Mar. 1	9	+ 1,27	47,75					
257	H. C. 12217.....	Feb. 16	8	+ 1,07	53,41	6.16.20	1	66.12.54,43	1,43	
258	16 Geminorum....	Mar. 1	7	+ 0,42	10,93	6.19.12	1	69.25.11,76	1,68	
259	H. C. 12239.....	Feb. 14	8	+ 1,93	31,14	6.19.44	1	62.56.32,23	1,72	
260	H. C. 12396.....	16	8½	- 0,67	4,61	6.21.16	1	72.17. 5,14	1,86	
261	H. C. 12483.....	14	8.9	+ 2,19	48,61	6.23.50	1	61.48.49,70	2,08	
262	H. C. 12496.....	14	9	+ 2,19	39,94	6.24. 3	1	61.48.41,03	2,10	
263	22 Geminorum....	16	8	- 0,16	43,58	6.25.59	1	70.27.44,30	2,27	
264	H. C. 12597.....	23	8.9	+ 0,41	49,01	6.26.50	1	68.59.49,88	2,34	
265	H. C. 12700.....	14	9½	+ 1,18	24,62	6.29.59	1	65.20.25,67	2,62	
266	B.A.C. 2184.....	Mar. 11	7	- 0,70	12,32	6.32.53	1	73.28.12,73	2,86	
267	H. C. 12871.....	Feb. 23	8	- 0,50	38,72	6.34.32	1	72. 0.39,29	3,01	
268	H. C. 12896.....	14	8	- 0,43	10,12	6.35.11	1	71.12.10,77	3,07	
269	H. C. 13015.....	23	8.9	- 0,97	58,84	6.38.35	1	73.35.59,24	3,37	
270	Sirius.....	Mar. 1		-10,39	2,95	6.38.40	1	106.31. 4,16	3,37	
271	Sirius R.....	1		-10,39	2,26		1	106.31. 1,79		
272	H. C. 13065.....	Feb. 14	8	+ 0,07	36,47	6.40.13	1	69.16.37,31	3,50	
273	H. C. 13122.....	Mar. 11	9	+ 2,54	19,35	6.41.54	1	63.56.20,43	3,64	
274	B.A.C. 2243.....	Feb. 23	8	+ 1,68	49,57	6.44. 3	2	64.30.51,22	3,83	
275	-----	Mar. 1	9	+ 1,95	50,72					
276	37 Geminorum....	Feb. 14	7	+ 1,26	40,80	6.46.16	2	64.26.41,70	+ 4,03	
277	-----	Mar. 11	7.8	+ 2,36	40,45					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
278	H. C. 13363 .....	Feb. 21	8 $\frac{1}{4}$	+ 1,37	10,26	6.48. 0	2	65.10.11,28	+ 4,17	
279	—	Mar. 1	8 $\frac{1}{4}$	+ 1,71	10,19					
280	H. C. 13422 .....	Feb. 14	9 $\frac{1}{4}$	- 0,16	59,58	6.49.22	1	68.42. 0,47	4,28	
281	B.A.C. 2280 .....	Mar. 11	8.9	- 0,78	44,17	6.51.24	1	73.51.44,54	4,45	
282	B.A.C. 2283 .....	1		+ 1,32	36,21	6.51.45	1	66.21.37,23	4,50	
283	* .....	Feb. 14	9 $\frac{1}{4}$	+ 1,51	37,15	6.54.12	2	63. 5.37,80	4,70	Nos. 283 and 284. The N.P.D. agrees with that of H. C. 13561, the R.A. of which appears to be about 30' too small. See the note to No. 120 in p. 49.
284	—	Mar. 10	9.10	+ 2,74	36,27					
285	H. C. 13611 .....	Feb. 21	9	+ 0,43	39,09	6.54.49	1	68.20.40,01	4,75	
286	H. C. 13644 .....	Mar. 11	8	+ 0,13	8,94	6.55.33	1	71. 7. 9,60	4,81	
287	H. C. 13758 .....	Feb. 14	8.9	- 1,18	30,93	6.58.49	2	73.58.31,02	5,09	
288	—	28	8.9	- 1,02	30,38					
289	* .....	Mar. 10	9.10	+ 0,24	55,90	7. 0.24	2	70.41.56,51	5,22	
290	—	11	9	+ 0,27	55,72					
291	H. C. 13818 .....	10	9	+ 0,22	34,75	7. 0.35	2	70.43.35,83	5,25	
292	—	11	9	+ 0,26	35,50					
293	H. C. 13889 .....	Feb. 14	8.9	- 0,14	12,40	7. 2.42	2	69.30.13,13	5,42	
294	—	16	8 $\frac{1}{4}$	- 0,08	12,22					
295	48 Geminorum.....	28	7.8	+ 1,43	46,94	7. 3.30	1	65.37.47,98	5,49	
296	H. C. 14038 .....	Mar. 15	8.9	+ 1,35	57,13	7. 6.46	1	67.46.58,08	5,77	
297	H. C. 14108 .....	Feb. 14	8	- 0,06	50,94	7. 8.37	2	68.59.51,89	5,92	Nos. 297 and 298. H. C. 14106 is the same star with an erroneous R.A. No. 299. The N.P.D. of H. C. is 1' too small. See note to No. 260 in p. 265 of Vol. XVIII.
298	—	28	8.9	+ 0,39	51,10					
299	H. C. 14192 .....	16	9	- 1,34	1,20	7.11. 4	1	74.33. 1,51	6,11	
300	H. C. 14242 .....	Mar. 11	8	+ 2,55	12,47	7.12.29	2	63.34.13,19	6,24	
301	—	15	8.9	+ 2,74	11,75					
302	58 Geminorum.....	Feb. 28	7	+ 1,00	33,47	7.14.38	1	66.46.34,48	6,42	
303	H. C. 14350 .....	28	8.9	+ 0,98	21,62	7.15.35	1	66.47.22,63	6,50	
304	H. C. 14369 .....	16	7	- 1,27	7,45	7.16. 4	1	74.12. 7,79	6,53	
305	* .....	16	9 $\frac{1}{4}$	- 1,28	50,66	7.16.19	1	74.11.51,00	6,56	
306	H. C. 14383 .....	Mar. 11	8.9	+ 0,22	38,18	7.16.34	1	70.42.38,88	6,57	
307	H. C. 14393 .....	Feb. 14	8	- 0,19	7,81	7.16.54	1	69.13. 8,66	6,60	No. 307. At the same time H. C. 14394 was judged to be of Mag. 8.9.
308	H. C. 14407 .....	Mar. 15		+ 0,08	58,72	7.17.22	1	71.33.59,33	6,64	
309	H. C. 14668 .....	Feb. 28	8.9	- 1,01	28,45	7.24.42	1	73.42.28,84	7,24	
310	Castor.....	14		+ 2,18	35,78					
311	—	16		+ 2,34	36,77					
312	—	Mar. 11		+ 4,28	37,21	7.25.13	4	57.47.37,68	7,28	
313	—	15		+ 4,54	37,13					
314	Castor R.....	Feb. 14		+ 2,18	38,51					
315	—	16		+ 2,34	36,91					
316	—	Mar. 11		+ 4,28	37,31		4	57.47.37,46		
317	—	15		+ 4,54	38,03					
318	* .....	Feb. 28	10	+ 0,57	16,64	7.28.59	1	67.48.17,59	7,59	No. 318. Observed for H. C. 14817, the N.P.D. of which is 30' too great. See note to No. 286 in p. 266 of Vol. XVIII.
319	B.A.C. 2506.....	Mar. 15	8	+ 2,07	51,21	7.29.20	1	65.18.52,26	7,62	
320	* .....	24	9	+ 1,52	31,17	7.29.34	2	68.12.32,88	7,63	
321	—	26		+ 1,60	32,72					
322	Pollux.....	Feb. 14		+ 1,10	20,81					
323	—	16		+ 1,24	20,67					
324	—	28		+ 2,16	22,49	7.36.19	5	61.37.22,53	8,18	
325	—	Mar. 11		+ 2,95	22,42					
326	—	15		+ 3,20	20,86					
327	Pollux R.....	Feb. 14		+ 1,10	22,02					
328	—	16		+ 1,24	22,04					
329	—	28		+ 2,16	21,39		5	61.37.21,36		
330	—	Mar. 11		+ 2,95	21,62					
331	—	15		+ 3,20	21,44					
332	H. C. 15159.....	23		+ 1,21	41,91					
333	—	24	8	+ 1,27	39,80	7.40. 6	4	68.50.42,61	8,49	
334	—	26		+ 1,35	43,72					
335	—	29		+ 1,48	41,47					
336	H. C. 15183.....	15	8 $\frac{3}{4}$	+ 1,95	2,01	7.40.44	1	65.22. 3,06	8,53	
337	H. C. 15323.....	Feb. 28	9	- 0,03	48,19					
338	—	Mar. 24	8	+ 1,06	47,41	7.44.28	3	69.26.48,95	8,83	
339	—	26		+ 1,13	48,77					
340	H. C. 15330.....	15	9	- 0,85	52,97	7.44.45	1	74.14.53,31	8,86	
341	* .....	23		+ 1,00	(22,48)					No. 341. This observation, taken under bad circumstances, is not used in obtaining the concluded N.P.D.
342	—	24	9	+ 1,05	26,13					
343	—	26		+ 1,13	26,18	7.45.34	3	69.26.27,18	8,91	
344	—	29		+ 1,27	26,73					
345	H. C. 15459.....	Feb. 28	8	+ 0,13	46,74	7.48.27	1	68.38.47,64	9,14	
346	5 Cancri.....	28	7.8	- 1,03	36,11	7.53. 7	1	73. 8.36,55	+ 9,51	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
347	H. C. 15809.....	Feb. 28	8 $\frac{1}{4}$	+ 0.46	18.67	7. 58. 13	1	66. 48. 19.68	+ 9.89	Nos 348 and 349. The N.P.D. of H. C. is 15" less. See note to No. 267, p. 95.
348	H. C. 15939.....	21	8	- 1.66	37.59	8. 1. 51	2	75. 3. 37.66	10.17	
349	—	28	9	- 1.57	37.17	8. 6. 20	1	68. 28. 39.55	10.50	
350	H. C. 16099.....	21	8 $\frac{3}{4}$	- 0.40	38.64	8. 6. 39	3	73. 28. 44.50	10.53	
351	H. C. 16110.....	19	8	- 1.37	45.07					
352	—	28	8	- 1.24	45.61					
353	—	Mar. 12	8	- 2.19	41.60					
354	H. C. 16130.....	23	7.8	+ 0.40	55.12					
355	—	24		+ 0.45	36.39	8. 7. 30	4	70. 51. 37.06	10.59	
356	—	26	7.8	+ 0.55	37.47					
357	—	29	7.8	+ 0.69	36.52					
358	B. (w.) VIII. 232 ...	Feb. 28	9	- 1.81	29.13	8. 9. 47	1	75. 54. 29.39	10.76	Nos. 373 and 374. The R.A. of the former star was found Nov. 2, 1859, by equatorial comparisons with the other, the R.A. of which is determined by transit observations. (See p. 171.) At the same time the Mag. of the first was judged to be 10, and that of the second 9.
359	H. C. 16327.....	19	9	- 1.16	36.00	8. 12. 48	1	71. 41. 36.60	10.98	
360	H. C. 16379.....	28	9.10	- 1.81	59.23	8. 14. 17	1	75. 47. 59.49	11.09	
361	B.A.C. 2810.....	19	8	- 1.34	26.51	8. 16. 23	1	72. 20. 27.04	11.24	
362	o Ursæ Majoris....	Mar. 12		+ 11.06	44.86	8. 18. 1	1	28. 47. 44.53	11.36	
363	o Ursæ Majoris R..	12		+ 11.06	43.74		1	28. 47. 44.82		
364	H. C. 16554.....	Feb. 28	8 $\frac{1}{4}$	+ 0.19	5.06	8. 18. 45	1	66. 22. 6.08	11.42	
365	H. C. 16565.....	Mar. 23	8	+ 1.18	23.81	8. 18. 58	1	68. 3. 24.75	11.43	
366	θ Cancri.....	12		- 0.45	42.72	8. 23. 12	1	71. 24. 43.35	11.73	
367	ε Cancri.....	12		- 0.16	18.46	8. 32. 1	1	69. 56. 19.24	12.35	
368	H. C. 17312.....	8	9	- 0.24	50.00	8. 39. 56	1	68. 45. 50.89	12.89	
369	54 Cancri.....	30		- 0.55	26.78	8. 42. 50	2	74. 6. 27.43	13.08	
370	—	Apr. 1		- 0.47	27.37					
371	B. (w.) VIII. 1210..	Mar. 8	9	- 1.97	59.72	8. 46. 40	1	75. 52. 59.98	13.33	
372	H. C. 17662.....	Apr. 1		- 8.91	41.26	8. 49. 16	1	103. 20. 42.46	13.51	
373	* .....	1		- 8.87	13.85	8. 49. 41	1	103. 9. 15.05	13.53	
374	* .....	1		- 8.86	7.73	8. 49. 55	1	103. 8. 8.93	13.55	
375	B. (w.) VIII. 1299..	Mar. 8	7.8	- 2.58	21.95	8. 50. 21	1	78. 35. 22.21	13.57	
376	B. (w.) VIII. 1344..	15	9	- 1.73	11.50	8. 52. 6	1	75. 35. 11.77	13.69	
377	B. (w.) VIII. 1443..	15	9	- 2.49	5.65	8. 56. 37	1	78. 34. 5.91	13.97	
378	H. C. 17905.....	18		- 0.22	49.75	8. 57. 8	1	69. 58. 50.52	14.00	
379	B.A.C. 3103.....	8	8	- 1.34	4.86	8. 58. 1	1	72. 18. 5.39	14.06	
380	* .....	24	10	- 2.29	13.64					No. 404. The R.A. of H. C. 19440, which is the same star, is 10" too small. No. 406. On Jan. 6, 1860, I found no star in the place of B. (w.) IX. 1267, which appears to be the same as B. (w.) IX. 1287 with an error of 1 <sup>m</sup> in R.A.
381	—	29	10	- 2.11	21.28	9. 16. 54	3	78. 3. 17.63	15.18	
382	—	30		- 2.07	17.26					
383	h Leonis.....	24		- 2.77	16.72					
384	—	29		- 2.60	18.79	9. 24. 5	3	79. 38. 18.41	15.59	
385	—	30		- 2.57	18.85					
386	B. (w.) IX. 534....	22	7.8	- 2.45	25.65	9. 24. 45	1	77. 58. 25.89	15.63	
387	H. C. 18903.....	24	8.9	- 2.29	35.31	9. 29. 46	1	77. 27. 35.55	15.90	
388	B. (w.) IX. 749....	24	8	- 1.96	9.78	9. 34. 13	2	75. 48. 9.44	16.13	
389	—	29	8	- 1.69	8.58					
390	ψ Leonis.....	22	7	- 1.96	28.92	9. 35. 43	1	75. 18. 29.19	16.21	
391	B. (w.) IX. 821....	23	7	- 3.12	35.92					
392	—	24	7	- 3.09	34.91	9. 37. 28	3	80. 26. 36.00	16.30	
393	—	29		- 2.95	36.19					
394	B. (w.) IX. 902....	24	8	- 3.27	2.49					
395	—	29		- 3.12	2.58	9. 41. 2	3	81. 1. 2.71	16.48	
396	—	30		- 3.10	1.94					
397	21 Leonis.....	22	7.8	- 2.55	24.25	9. 42. 55	1	77. 28. 24.49	16.58	
398	B. (w.) IX. 1011 ...	24	8.9	- 3.58	21.15					
399	—	29		- 3.48	19.70	9. 46. 53	3	82. 13. 20.89	16.76	
400	—	30		- 3.45	20.39					
401	B. (w.) IX. 1035....	23	8	- 3.49	38.96					No. 406. On Jan. 6, 1860, I found no star in the place of B. (w.) IX. 1267, which appears to be the same as B. (w.) IX. 1287 with an error of 1 <sup>m</sup> in R.A.
402	—	24	7	- 3.47	37.76	9. 48. 9	3	81. 37. 38.72	16.83	
403	—	30		- 3.32	38.19					
404	B.A.C. 3398.....	22	7	- 3.25	20.28	9. 48. 38	1	80. 22. 20.61	16.85	
405	B. (w.) IX. 1117....	Apr. 1	9	- 1.60	6.67	9. 52. 2	1	75. 2. 6.95	17.01	
406	B. (w.) IX. 1287...	1	8 $\frac{1}{2}$	- 3.69	29.96	10. 0. 0	1	82. 59. 30.51	17.37	
407	Regulus.....	Mar. 22		- 2.80	57.48					
408	—	23		- 2.75	57.18	10. 0. 32	3	77. 18. 57.51	17.39	
409	—	24		- 2.70	57.14					
410	Regulus R.....	22		- 2.80	56.79					
411	—	23		- 2.75	56.22		3	77. 18. 57.17		
412	—	24		- 2.70	57.00					
413	B.A.C. 3464.....	8	8	- 3.52	17.64	10. 1. 44	1	79. 41. 17.94	17.44	
414	B. (w.) x. 37.....	Feb. 21	7.8	- 3.48	38.69	10. 3. 26	1	84. 1. 39.31	17.52	
415	B. (w.) x. 38.....	Apr. 1	7	- 3.76	38.65					
416	—	13	7.8	- 3.36	36.79	10. 3. 29	2	83. 6. 38.28	+ 17.52	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
417	H. C. 19857.....	Mar. 30	8	-3.47	52.81	10. 4. 52	1	81. 35. 53.23	+17.58	
418	19 Sextantis.....	29	7	-4.18	37.43	10. 5. 9	1	84. 39. 38.12	17.59	
419	B. (w.) x. 110.....	Mar. 24	8	-4.04	17.77	10. 7. 3	2	83. 31. 20.23	17.67	
420	—	30	7	-3.93	21.50					
421	B. (w.) x. 112.....	Apr. 13		-2.52	32.86	10. 7. 11	1	80. 3. 33.17	17.67	
422	B. (w.) x. 134.....	Feb. 21	9	-3.48	59.71	10. 8. 30	1	82. 8. 0.18	17.73	
423	B. (w.) x. 161.....	Mar. 8	9.10	-3.85	15.00	10.10. 4	1	81. 45. 15.44	17.79	
424	B. (w.) x. 169.....	8	8.9	-3.86	45.16	10.10.27	1	81. 44. 45.60	17.81	
425	B. (w.) x. 173.....	29	9.10	-2.88	45.22	10.10.34	1	78. 25. 45.47	17.81	
426	H. C. 20020.....	24	8	-3.46	33.05					
427	—	30	7.8	-3.26	36.15	10.11.39	2	80. 15. 34.93	17.86	
428	H. C. 20080.....	Feb. 21	9	-3.50	2.16	10.13.40	1	78. 11. 2.41	17.94	
429	*.....	Mar. 29	8	-3.32	42.12					
430	—	Apr. 1	9	-3.19	42.04	10.13.45	2	80. 10. 42.40	17.94	
431	B. (w.) x. 261.....	Mar. 30	8	-4.45	26.91	10.15.33	1	85. 26. 27.66	18.01	
432	H. C. 20183.....	8	8 $\frac{3}{4}$	-3.58	55.60	10.17.10	1	78. 5. 55.84	18.07	
433	B. (w.) x. 297.....	8	8 $\frac{3}{4}$	-3.60	57.69	10.17.39	1	78. 5. 57.93	18.09	
434	B. (w.) x. 299.....	24	7.8	-4.25	40.45					
435	—	Apr. 1	8	-4.09	44.39	10.17.42	2	84. 4. 43.05	18.09	
436	B. (w.) x. 315.....	Feb. 21	7.8	-3.55	18.73	10.18.31	1	85. 19. 19.47	18.12	
437	B. (w.) x. 317.....	Mar. 30	9	-2.19	14.36	10.18.40	1	75. 0. 14.64	18.13	
438	H. C. 20326.....	Apr. 1	8	-3.58	6.48	10.21.26	1	81. 27. 6.89	18.23	
439	B. (w.) x. 396.....	Feb. 21	9.10	-3.62	4.76	10.22.25	1	81. 21. 5.16	18.27	
440	H. C. 20381.....	Mar. 8	9	-3.78	46.08	10.23.36	1	79. 11. 46.36	18.31	
441	<i>i</i> Leonis.....	30	5	-2.33	34.58					
442	—	Apr. 1	5.6	-2.20	34.99	10.24.21	2	75. 6. 35.07	18.33	
443	B. (w.) x. 496.....	Feb. 21	9	-3.72	45.51					
444	—	Mar. 8	9.10	-3.76	44.86	10.28.12	3	77. 57. 44.25	18.47	
445	—	30	10	-3.01	41.65					
446	H. C. 20516.....	Apr. 1	8 $\frac{1}{2}$	-2.98	52.00	10.28.55	1	78. 12. 52.25	18.49	
447	B. (w.) x. 553.....	Mar. 29	8	-2.55	3.60	10.30.54	1	75. 13. 3.88	18.56	
448	B. (w.) x. 580.....	30	8 $\frac{3}{4}$	-3.37	40.49					
449	—	Apr. 1	8	-3.30	43.06	10.32.28	2	79. 24. 42.07	18.61	
450	B. (w.) x. 593.....	Mar. 8	9	-4.45	9.76	10.34.37	1	86. 26. 10.55	18.68	
451	35 Sextantis SP....	Apr. 1	8 $\frac{1}{2}$	-4.36	0.61	10.35.42	1	84. 29. 1.28	18.71	
452	35 Sextantis <i>nf</i> ....	1	7	-4.36	57.29	10.35.43	1	84. 28. 57.96	18.71	
453	*.....	Mar. 29	8	-4.51	43.68					
454	—	30	7.8	-4.50	43.72	10.35.48	2	84. 55. 44.41	18.72	
455	B. (w.) x. 718.....	14	8.9	-4.11	32.21					
456	—	30	9	-3.70	32.00	10.40.31	2	80. 23. 32.44	18.86	
457	B. (w.) x. 795.....	Apr. 1	9	-4.96	43.96	10.43.47	1	87. 12. 44.80	18.96	
458	B. (w.) x. 847.....	Mar. 14	9	-4.65	60.50	10.46.17	2	85. 31. 0.76	19.03	
459	—	Apr. 27	8.9	-3.81	59.51					
460	$\beta$ Ursæ Majoris....	Mar. 14		+1.63	49.82	10.52.56	2	32. 49. 49.87	19.20	
461	—	30		+5.58	50.33					
462	$\beta$ Ursæ Majoris R..	14		+1.63	46.53					
463	—	30		+5.58	48.87		2	32. 49. 48.63		
464	$\chi$ Leonis.....	Apr. 30		-2.66	12.50	10.57.26	1	81. 52. 12.95	19.31	
465	$\chi$ Leonis R. ....	30		-2.66	13.29		1	81. 52. 13.59		
466	B. (w.) x1. 78.....	30	10	-4.10	53.49	11. 6. 2	1	86. 25. 54.28	19.50	
467	$\theta$ Leonis.....	Mar. 14		-0.84	6.12	11. 6. 31	1	73. 46. 6.50	19.51	
468	$\theta$ Leonis R.....	14		-0.84	6.04		1	73. 46. 6.40		
469	B. (w.) x1. 186....	Apr. 30	10	-4.45	35.55	11.11.33	1	87. 29. 36.40	19.61	
470	B. (w.) x1. 210....	26		-5.00	18.61	11.12.43	1	88. 55. 19.53	19.63	
471	79 Leonis.....	30	7	-4.58	8.28	11.16.30	1	87. 47. 9.15	19.69	
472	B. (w.) x1. 368....	12	10	-4.92	29.93	11.21.14	1	86. 20. 30.72	19.77	
473	B. (w.) x1. 369....	13	8	-5.22	12.62	11.21.15	1	87. 59. 13.50	19.77	
474	H. C. 21911.....	30	8	-5.12	49.58	11.24.46	1	89. 35. 50.54	19.82	
475	B. (w.) x1. 482....	12	8.9	-4.28	49.76					
476	—	13	9	-4.25	50.06					
477	—	26	8	-3.52	48.56	11.27.58	4	82. 39. 49.86	19.86	
478	—	30	8	-3.27	48.99					
479	B. (w.) x1. 548....	13	8	-4.38	24.83					
480	—	30	8 $\frac{1}{2}$	-3.44	23.40	11.31.31	3	83. 7. 24.21	19.90	
481	—	May 4	7.8	-3.18	22.72					
482	B. (w.) x1. 568....	Apr. 26	9	-6.02	15.80	11.32.47	1	92. 30. 16.87	19.91	
483	B. (w.) x1. 570....	May 7		-4.31	10.75	11.32.51	1	87. 35. 11.61	19.91	
484	B. (w.) x1. 593....	Apr. 12	9.10	-5.04	38.06					
485	—	13	9	-5.00	39.45	11.33.58	2	86. 10. 39.54	+19.93	

Nos. 426 and 427. B. (w.) x. 190 has the same R.A., but less N.P.D. by 2'. The observer set by Bessel's N.P.D. and noted that the star was 'low in the field.' On Jan. 6, 1860, it was found by comparison with B.A.C. 3538 that Bessel's N.P.D. is 2' defective. At the same time no star was seen in the place of B. (w.) x. 210, but one was found of the same R.A., and greater N.P.D. by about 9'.30".

No. 428. This is Rumker 3152, and is so named in the Catalogue of 1849.

Nos. 429 and 430. The R.A. was determined Jan. 6, 1860, by comparison with H. C. 20107, and its Mag. considered to be 8.9. No star was found in the place of H. C. 20106, the N.P.D. of which is 5' too small.

No. 447. Bessel's N.P.D. is 1' greater. The star is H. C. 20563, the N.P.D. of which agrees with that from the Camb. observation, which was also confirmed by an equatorial comparison with B. (w.) x. 549 on Jan 6, 1860.

No. 450. This is H. C. 20662, by which and a circle transit on this day, Bessel's R.A. is 1<sup>m</sup> too small.

No. 451. This in p. 189 is called B. (w.) x. 640.

Nos. 453 and 454. The R.A. was determined on Jan. 6, 1860, by comparison with B. (w.) x. 664.

Nos. 466 and 469. The stars were too faint from day-light for estimation of magnitudes.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
486	B. (w.) XI. 654. ....	Apr. 30	9	-4.48	49,00	11. 37. 29	1	86. 49. 49,82	+19,96	
487	B. (w.) XI. 689. ....	12	9.10	-5.86	48,98					
488	—	13	9	-5.87	49,86	11. 39. 29	3	90. 48. 50,29	19,97	
489	—	26	8	-5.63	48,99					
490	$\beta$ Leonis. ....	Mar. 17		-4.89	22,27	11. 41. 33	2	74. 36. 22,60	19,99	
491	—	30		-4.08	22,30					
492	$\beta$ Leonis R. ....	17		-4.89	19,92					
493	—	30		-4.08	21,56		2	74. 36. 21,17		
494	H. C. 22330. ....	May 4	7.8	-4.37	1,03	11. 42. 15	2	86. 57. 1,69	20,00	
495	—	7	7.8	-4.21	0,68					
496	B. (w.) XI. 787. ....	Apr. 12	9	-4.89	6,27					
497	—	26	9	-4.20	3,72	11. 45. 46	3	84. 29. 5,36	20,02	
498	—	May 4	9	-3.73	4,07					
499	B.A.C. 4025. ....	7	7.8	-5.26	14,85	11. 47. 19	1	90. 37. 15,85	20,02	
500	B. (w.) XI. 844. ....	Mar. 18	8.9	-5.37	9,89					
501	—	Apr. 26		-4.10	8,70	11. 49. 16	3	83. 50. 9,65	20,03	
502	—	May 4	7.8	-3.60	8,53					
503	B.A.C. 4039. ....	7	6.7	-3.93	57,15	11. 50. 42	1	85. 41. 57,91	20,04	
504	* .....	Apr. 30	9.10	-5.21	57,26					Nos. 504—509. These two stars have very nearly the same R.A., which was determined on Jan. 6, 1860, by comparison with H. C. 22631.
505	—	May 4	9	-5.05	56,95	11. 54. 26	3	89. 5. 57,67	20,05	
506	—	7	9	-4.90	56,02					
507	* .....	Apr. 30	8½	-5.21	41,30					
508	—	May 4	8	-5.04	39,70	11. 54. 26	3	89. 4. 41,83	20,05	
509	—	7	8½	-4.90	41,73					
510	B. (w.) XI. 951. ....	Mar. 12	8.9	-5.36	4,76	11. 55. 22	1	85. 2. 5,48	20,05	
511	B. (w.) XI. 1033. ....	May 4	8	-6.18	6,04	12. 0. 56	2	93. 31. 8,52	20,05	
512	—	7	9	-6.09	8,80					
513	10 Virginis. ....	Mar. 18	8	-5.57	35,66	12. 2. 9	1	87. 16. 36,50	20,05	
514	B. (w.) XII. 45. ....	Apr. 30	9	-5.90	39,80	12. 3. 50	1	91. 52. 40,85	20,05	
515	B. (w.) XII. 62. ....	May 4	8.9	-6.81	58,56	12. 4. 42	2	96. 11. 0,58	20,05	
516	—	7	9	-6.76	60,29					
517	B. (w.) XII. 64. ....	11	10.11	-5.12	12,83	12. 4. 51	1	90. 21. 13,82	20,05	No. 517. Too faint from day-light for estimation of magnitude.
518	B. (w.) XII. 93. ....	Mar. 18		-5.54	26,18	12. 6. 38	1	90. 46. 27,19	20,05	
519	H. C. 22945. ....	May 10	8	-5.22	31,72	12. 7. 2	1	90. 30. 32,72	20,05	
520	$\delta$ Ursæ Majoris. ....	Mar. 14		-3.84	0,27	12. 8. 8	1	32. 9. 0,05	20,04	
521	$\delta$ Ursæ Majoris R. ....	14		-3.84	1,38		1	32. 9. 2,34		
522	H. C. 22986. ....	Apr. 30	8.9	-6.00	39,21	12. 8. 36	1	92. 11. 40,27	20,04	No. 522. B. (w.) XII. 124 has the same N.P.D. but greater R.A. by 3". There are not two stars. The R.A. of H. C. was confirmed by comparisons of this star on Jan. 6, 1860, with H. C. 22991 and 22999, which are the same as B. (w.) XII. 126 and 136. In the course of the comparison it was found that the star No. 466 in p. 218 of Vol. XVIII is B. (w.) XII. 126, and that 10 <sup>s</sup> should not have been subtracted from the recorded times.
523	B. (w.) XII. 138. ....	May 4	7.8	-5.08	48,82	12. 9. 27	1	88. 49. 49,73	20,04	
524	B. (w.) XII. 159. ....	Apr. 26	9.10	-5.20	9,59	12. 10. 39	2	87. 43. 8,94	20,03	
525	—	May 5	8.9	-4.76	6,55					
526	B. (w.) XII. 178. ....	Mar. 18	9	-5.53	2,64	12. 11. 42	2	92. 30. 2,69	20,03	
527	—	Apr. 30	8	-6.07	0,60					
528	B. (w.) XII. 218. ....	May 4	9.10	-5.26	(3,90)					
529	—	7	10	-5.12	8,97	12. 13. 45	2	89. 26. 9,75	20,02	
530	—	11	9.10	-4.92	8,64					
531	H. C. 23179. ....	Apr. 30	8.9	-6.55	10,07	12. 15. 29	1	94. 46. 11,20	20,01	
532	B. (w.) XII. 269. ....	Mar. 18		-5.71	6,94	12. 17. 10	1	87. 48. 7,81	20,00	
533	H. C. 23223. ....	May 11	8	-5.98	6,21	12. 17. 28	1	93. 24. 7,30	20,00	
534	B. (w.) XII. 291. ....	4	8	-6.33	44,52					
535	—	7		-6.26	45,01	12. 18. 16	3	94. 2. 45,37	19,99	
536	—	10	8	-6.16	43,24					
537	B. (w.) XII. 309. ....	5	8	-7.19	55,65	12. 19. 26	1	98. 0. 56,82	19,98	
538	B.A.C. 4201. ....	Apr. 26	7	-7.14	43,66					
539	—	30	7.8	-7.16	43,31	12. 20. 24	3	97. 51. 44,73	19,98	
540	—	May 4	7	-7.16	43,72					
541	B. (w.) XII. 356. ....	Mar. 18	8.9	-5.75	0,60	12. 21. 24	1	88. 2. 1,48	19,97	
542	B. (w.) XII. 361. ....	May 10	9.10	-5.99	39,76	12. 21. 37	2	93. 17. 42,04	19,97	
543	—	11	9	-5.96	42,14					
544	B. (w.) XII. 388. ....	7	10	-5.62	9,88	12. 23. 38	1	91. 15. 10,92	19,95	
545	B. (w.) XII. 420. ....	Apr. 26	8½	-5.67	47,61					
546	—	May 5	8	-5.30	47,82					
547	—	10	8	-5.05	47,81	12. 25. 28	4	89. 27. 48,86	19,93	
548	—	11	8½	-5.00	48,38					
549	B. (w.) XII. 446. ....	7	8	-6.02	25,75	12. 26. 40	1	92. 54. 26,83	19,92	
550	B. (w.) XII. 475. ....	5	9	-5.57	11,53	12. 28. 24	1	90. 36. 12,53	19,90	
551	B. (w.) XII. 493. ....	10	9	-5.07	44,54					
552	—	11	9	-5.02	44,73	12. 29. 44	2	89. 22. 45,58	19,89	
553	$\chi$ Virginis. ....	7	4.5	-6.96	7,49	12. 31. 40	2	97. 11. 8,74	+19,86	
554	—	14	6	-6.85	7,67					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
555	B. (w.) XII. 544....	May 5	9.10	- 6.65	26.10	12.32.43	2	95.32.26,18	+ 19,85	No. 557. The magnitude was estimated as it appeared in a 'thick sky.'
556	—	10	8½	- 5.20	25.97	12.32.43	2	95.32.26,18	+ 19,85	
557	28 Virginis.....	Apr. 27	8	- 6.92	27.64	12.34.22	2	96.41.28,66	19,83	
558	—	May 5	5	- 6.88	27.35	12.34.22	2	96.41.28,66	19,83	
559	B. (w.) XII. 599....	7	9	- 5.85	3.82	12.35.51	2	92.4.5,86	19,81	
560	—	11	8	- 5.71	5.78	12.35.51	2	92.4.5,86	19,81	
561	B. (w.) XII. 619....	7	7.8	- 5.86	9.80	12.36.39	1	92.2.10,86	19,80	
562	B.A.C. 4294.....	Apr. 27	7	- 6.73	46.33	12.36.39	1	92.2.10,86	19,80	
563	—	May 5	6	- 6.64	46.32	12.39.58	4	95.29.47,71	19,75	
564	—	11	7	- 6.51	46.88	12.39.58	4	95.29.47,71	19,75	
565	—	14	7	- 6.43	46.74	12.39.58	4	95.29.47,71	19,75	
566	B. (w.) XII. 730....	11	9.10	- 6.77	12.77	12.42.54	2	96.37.13,90	19,71	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
567	—	14	10	- 6.69	12.71	12.42.54	2	96.37.13,90	19,71	
568	B. (w.) XII. 753....	5	8.9	- 6.87	39.10	12.44.4	1	96.40.40,26	19,69	
569	B. (w.) XII. 798....	5	9	- 5.83	6.90	12.46.54	1	91.21.7,93	19,64	
570	B. (w.) XII. 829....	11	8½	- 5.29	36.20	12.48.25	2	90.1.36,90	19,61	
571	—	14	9	- 5.13	35.64	12.48.25	2	90.1.36,90	19,61	
572	B. (w.) XII. 845....	Apr. 27	10	- 7.36	7.55	12.49.18	1	100.5.8,73	19,59	
573	B. (w.) XII. 869....	May 5	7.8	- 6.76	9.87	12.50.59	1	96.9.11,02	19,56	
574	B. (w.) XII. 885....	11	8½	- 5.37	8.70	12.51.50	1	90.20.9,69	19,54	
575	B. (w.) XII. 935....	Apr. 27	8.9	- 7.51	5.86	12.54.32	1	101.19.7,05	19,49	
576	B. (w.) XII. 953....	May 5	9	- 6.22	12.63	12.55.26	1	93.13.13,72	19,47	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
577	B. (w.) XII. 956....	11	10	- 6.48	54.69	12.55.37	2	95.19.56,15	19,47	
578	—	14	10	- 6.39	55.33	12.55.37	2	95.19.56,15	19,47	
579	H. C. 24344.....	Apr. 27	10.11	- 6.48	6.51	12.58.54	1	93.33.7,61	19,40	
580	B. (w.) XII. 1025....	May 5	9	- 5.81	51.36	12.59.45	1	90.53.52,38	19,38	
581	B. (w.) XII. 1039....	14	8½	- 7.88	52.28	13.0.22	1	102.19.53,47	19,36	
582	B. (w.) XIII. 59....	14	9	- 6.90	30.68	13.4.40	1	97.41.31,85	19,26	
583	H. C. 24669.....	14	8	- 6.42	23.86	13.10.28	1	95.29.25,00	19,11	
584	Spica.....	May 10	10	- 7.34	32.87	13.17.27	2	100.23.33,54	18,92	
585	—	13	10	- 7.34	31.84	13.17.27	2	100.23.33,54	18,92	
586	Spica R.....	10	10	- 7.34	31.52	13.17.27	2	100.23.31,95	18,92	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
587	—	13	10	- 7.34	33.27	13.17.27	2	100.23.31,95	18,92	
588	ζ Virginis.....	10	10	- 5.54	32.64	13.27.13	1	89.50.33,61	18,62	
589	ζ Virginis R.....	10	10	- 5.54	34.47	13.27.13	1	89.50.34,24	18,62	
590	υ Bootis.....	Apr. 27	10	- 4.66	14.06	13.42.23	1	73.28.14,47	18,09	
591	υ Bootis R.....	27	10	- 4.66	15.02	13.42.23	1	73.28.15,37	18,09	
592	Arcturus.....	June 21	10	+ 2.09	57.30	14.8.57	1	70.2.58,07	16,96	
593	Arcturus R.....	21	10	+ 2.09	59.30	14.8.57	1	70.2.59,27	16,96	
594	ε Bootis.....	14	14	+ 3.36	10.29	14.38.34	1	62.18.11,38	15,45	
595	ε Bootis R.....	14	14	+ 3.36	13.24	14.38.34	1	62.18.12,89	15,45	
596	α² Libræ.....	17	17	- 7.05	37.36	14.42.45	1	105.25.38,57	15,20	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
597	β Bootis.....	14	14	+ 1.73	32.94	14.56.25	1	49.1.33,44	14,40	
598	β Bootis R.....	14	14	+ 1.73	33.57	14.56.25	1	49.1.33,82	14,40	
599	β Libræ.....	14	14	- 5.16	10.10	15.9.6	1	98.50.11,28	13,60	
600	ι Draconis.....	Aug. 9	9	+ 14.23	2.36	15.21.40	1	30.31.2,08	12,78	
601	ι Draconis R.....	9	9	+ 14.23	2.59	15.21.40	1	30.31.3,63	12,78	
602	α Coronæ.....	June 29	29	+ 4.51	12.55	15.28.28	1	62.47.13,64	12,31	
603	α Coronæ R.....	29	29	+ 4.51	14.79	15.28.28	1	62.47.14,44	12,31	
604	δ Ophiuchi.....	16	16	- 3.40	42.99	16.6.39	1	93.18.44,08	9,52	
605	δ Ophiuchi R.....	16	16	- 3.40	41.99	16.6.39	1	93.18.41,64	9,52	
606	τ Herculis.....	16	16	+ 9.81	62.31	16.15.19	1	43.20.2,50	8,84	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
607	τ Herculis R.....	16	16	+ 9.81	57.96	16.15.19	1	43.19.58,50	8,84	
608	α Herculis.....	10	10	- 2.65	17.75	17.7.57	2	75.26.17,00	4,51	
609	—	16	10	- 1.51	15.71	17.7.57	2	75.26.17,00	4,51	
610	α Herculis R.....	10	10	- 2.65	17.85	17.7.57	2	75.26.17,00	4,51	
611	—	16	10	- 1.51	(22,17)	17.7.57	1	75.26.18,32	4,51	
612	ρ Herculis sf.....	July 9	9	+ 5.21	55.95	17.18.37	2	52.42.57,04	3,60	
613	—	15	9	+ 6.60	56.72	17.18.37	2	52.42.57,04	3,60	
614	ρ Herculis sf. R....	15	9	+ 6.60	53.95	17.18.37	1	52.42.53,99	3,60	
615	α Ophiuchi.....	June 10	10	- 3.01	43.94	17.28.7	4	77.19.44,42	2,78	
616	—	16	10	- 1.93	43.32	17.28.7	4	77.19.44,42	2,78	No. 580. Bessel's N.P.D. is about 42" less. By a comparison of this star with B. (w.) XII. 1021 on Jan. 6, 1860, the excess of N.P.D. of the latter was found 31" less than that of Weisse's Catalogue, the difference of R.A. agreeing.
617	—	July 9	9	+ 2.03	44.02	17.28.7	4	77.19.44,42	2,78	
618	—	15	9	+ 2.94	45.44	17.28.7	4	77.19.44,42	2,78	
619	α Ophiuchi R.....	June 10	10	- 3.01	43.88	17.28.7	4	77.19.44,42	2,78	
620	—	16	10	- 1.93	44.41	17.28.7	3	77.19.44,37	2,78	
621	—	July 15	15	+ 2.94	43.33	17.28.7	3	77.19.44,37	2,78	
622	H. C. 32271.....	15	9.10	- 1.90	50.88	17.34.46	1	107.25.52,09	2,20	
623	ι Herculis.....	9	9	+ 5.30	45.84	17.35.19	1	43.54.46,06	+ 2,15	
624	ι Herculis R.....	9	9	+ 5.30	46.44	17.35.19	1	43.54.46,96	+ 2,15	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
625	B.A.C. 6023 .....	Aug. 10		- 3,33	11,93	17.40.59	1	114. 9. 13,14	+ 1,66	No. 625. See note to No. 553 in p. 100.
626	B.A.C. 6034 .....	June 17	7.8	- 2,03	36,31	17.43. 8	1	109.28.37,52	1,47	
627	ψ Draconis .....	July 15		+ 7,27	51,59					
628	-----	Aug. 9		+ 13,10	49,61	17.44.33	2	17.46.50,12	1,36	
629	ψ Draconis R.....	July 15		+ 7,27	46,90					
630	-----	Aug. 9		+ 13,10	48,07		2	17.46.48,72		
631	B.A.C. 6048 .....	9		+ 13,08	19,48	17.44.35	1	17.46.19,00	1,34	
632	B.A.C. 6048 R. ....	9		+ 13,08	19,40		1	17.46.20,63		
633	H. C. 32648.....	July 9	8	- 1,84	57,84	17.45. 4	1	109.50.59,05	1,31	
634	A. (o.) 17422.....	Aug. 10		- 3,46	11,47	17.49.48	1	115.47.12,68	0,89	No. 634. Of Mag. 9 by Argelander. No. 635. The N.P.D. of H. C. is 10' less. See No. 526 in p. 105 of Vol. XVIII.
635	H. C. 32848.....	10	9	- 3,43	56,60	17.50. 9	1	115.47.57,81	0,86	
636	γ Sagittarii.....	July 15		- 2,11	32,59	17.53.51	1	114.16.33,80	0,54	
637	H. C. 33031.....	9	8	- 1,14	23,05	17.54.48	1	107.36.24,26	0,45	
638	H. C. 33089.....	June 17	8.9	- 1,55	57,03	17.56. 6	1	107. 1.58,24	0,34	
639	H. C. 33102.....	Aug. 10		- 1,86	13,99	17.56.34	1	111.40.15,20	0,31	
640	*.....	July 15	9	- 1,14	0,33	17.59.45	1	109.53. 1,54	+ 0,01	No. 640. The R.A. was found Aug. 12, 1859 by equatorial comparison with H. C. 33236.
641	72 Ophiuchi .....	1		+ 0,51	10,03	18. 0.23	1	80.27.10,37	- 0,03	
642	72 Ophiuchi R. ....	1		+ 0,51	9,39		1	80.27. 9,79		
643	H. C. 33272.....	Aug. 10	9	- 2,35	31,32	18. 1. 8	1	113.47.32,53	0,10	
644	B.A.C. 6158 .....	July 15	7½	- 1,04	56,24	18. 2.32	1	109.51.57,45	0,22	
645	H. C. 33386.....	9	9	- 1,31	50,24	18. 4. 7	1	113. 8.51,45	0,37	
646	μ¹ Sagittarii.....	Aug. 8		- 1,42	31,13					
647	-----	9		- 1,44	30,37	18. 4.58	2	111. 5.31,96	0,44	
648	μ¹ Sagittarii R.....	8		- 1,42	34,68					
649	-----	9		- 1,44	31,47		2	111. 5.32,61		
650	B.A.C. 6194.....	Aug. 10	5	- 2,81	23,52	18. 8.51	1	117. 5.24,73	0,77	
651	B.A.C. 6195.....	July 15	8	- 0,57	37,90	18. 8.51	1	108.30.39,11	0,77	
652	H. C. 33627.....	15	9	- 0,52	33,34	18. 9.45	1	108.31.34,55	0,86	
653	H. C. 33709.....	9	8.9	- 0,64	23,11	18.11.49	1	110.16.24,32	1,04	
654	H. C. 33830.....	Aug. 10	8	- 2,32	2,66	18.15. 0	1	116.31. 3,87	1,31	
655	H. C. 33974.....	8	9	+ 0,04	59,81	18.18. 5	1	107.44. 1,02	1,59	
656	δ Ursæ Minoris....	July 15		+ 4,62	4,48					No. 656. The concluded N.P.D. is the mean from three bisections. No. 657. Two bisections. No. 658. Three bisections. No. 659. Two bisections. No. 660. The N.P.D. agrees nearly with that of H. C. 34045, but is greater by 36" than that of B.A.C.
657	-----	Aug. 9		+ 11,02	5,56	18.19.46	2	3.24. 4,81	1,73	
658	δ Ursæ Minoris R..	July 15		+ 4,62	2,93					
659	-----	Aug. 9		+ 11,02	4,92		2	3.24. 4,56		
660	B.A.C. 6271.....	July 1	7.8	- 0,61	44,35	18.19.51	1	119.20.45,57	1,73	
661	B.A.C. 6273.....	Aug. 23	8½	- 2,24	42,81	18.20.18	1	115.20.44,02	1,78	
662	B.A.C. 6292.....	8	7.8	- 0,05	48,68	18.22.42	1	108.59.49,89	1,98	
663	H. C. 34354.....	8	8	+ 0,23	43,10	18.26.59	1	108.39.44,31	2,36	
664	α Lyræ .....	July 19		+ 5,64	60,54					
665	-----	Aug. 6		+ 10,02	63,05					
666	-----	10		+ 10,90	59,23	18.31.58	4	51.21. 0,98	2,79	
667	-----	23		+ 13,21	58,58					
668	α Lyræ R.....	July 19		+ 5,64	59,13					
669	-----	Aug. 6		+ 10,02	59,61					
670	-----	10		+ 10,90	60,71		4	51.20.59,99		
671	-----	23		+ 13,21	60,05					
672	H. C. 34627.....	8	9	- 0,63	17,55					
673	-----	9	9.10	- 0,64	16,75	18.33.59	2	114. 6.18,36	2,96	
674	ε¹ Lyræ sf.....	6		+ 9,81	51,10	18.39.28	1	50.28.51,68	3,44	
675	ε¹ Lyræ sf. R.....	6		+ 9,81	48,35		1	50.28.44,52		
676	H. C. 34884.....	9	8½	+ 0,85	31,50	18.40. 9	1	108.45.32,71	3,50	
677	H. C. 34889.....	9	9	+ 0,85	22,92	18.40.12	1	108.47.24,13	3,50	
678	H. C. 35076.....	9		+ 1,06	30,03	18.44.30	1	108.48.31,24	3,87	
679	β Lyræ .....	July 15		+ 3,88	17,26					
680	-----	19		+ 4,96	17,21	18.44.39	2	56.48.18,16	3,88	
681	β Lyræ R.....	15		+ 3,88	16,95					
682	-----	19		+ 4,96	15,66		2	56.48.16,12		
683	σ Sagittarii.....	Aug. 9	4	- 0,50	26,03	18.46. 9	1	116.28.27,24	4,01	
684	H. C. 35311.....	10		- 0,28	0,16	18.49.57	1	116.23. 1,37	4,34	
685	H. C. 35459.....	9	9	+ 1,76	12,49	18.53.19	1	107.33.13,70	4,63	
686	ζ Aquilæ .....	July 15		+ 3,16	4,90	18.58.39	1	76.21. 5,15	5,08	
687	B.A.C. 6544 .....	Aug. 8	8	+ 1,78	48,23	19. 0. 8	1	109.10.49,44	5,21	
688	H. C. 35867.....	6	9	+ 1,71	54,97	19. 2.38	1	110.34.56,18	5,42	
689	H. C. 36128.....	10	8½	+ 2,21	20,20	19. 7.35	1	108.54.21,41	5,84	
690	η Lyræ R.....	Sept. 22		+ 16,89	16,08	19. 8.45	1	51. 6.16,21	5,93	
691	B.A.C. 6587.....	Aug. 8	8	+ 2,30	18,42	19. 9.35	1	109. 7.19,63	6,00	
692	ρ¹ Sagittarii.....	Sept. 22		+ 1,69	9,37	19.13. 9	1	108. 7.10,58	6,29	
693	H. C. 36591.....	Aug. 11	8	+ 2,17	46,75	19.17.22	1	111.49.47,96	- 6,64	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
694	δ Aquilæ .....	July 19		+ 3,73	27,06	19. 18. 5	1	87. 10. 27,90	-6,71	
695	δ Aquilæ R. ....	19		+ 3,73	25,93		1	87. 10. 25,85		
696	H. C. 36961.....	Aug. 11	9.10	+ 3,54	20,54	19. 25. 32	1	106. 35. 21,75	7,31	
697	H. C. 36976.....	10	8	+ 3,55	16,51	19. 25. 48	1	106. 37. 17,72	7,34	
698	ε <sup>1</sup> Sagittarii.....	11	7.8	+ 3,87	30,75	19. 32. 18	1	106. 37. 31,96	7,86	
699	* .....	11	9.10	+ 3,87	57,01	19. 32. 20	1	106. 36. 58,22		No. 699. By a micrometer comparison on Aug. 11, 1859, this star followed ε <sup>1</sup> Sagittarii 2 <sup>nd</sup> .
700	γ Aquilæ .....	Sept. 30		+ 11,66	28,01					
701	—	Oct. 1		+ 11,67	27,47	19. 39. 16	2	79. 44. 28,04	8,42	
702	γ Aquilæ R. ....	Sept. 30		+ 11,66	(37,94)		1	79. 44. 32,22		No. 702. Too discordant from unfavorable circumstances.
703	—	Oct. 1		+ 11,67	31,78					
704	B.A.C. 6773 .....	Aug. 8	7.8	+ 3,56	53,08					
705	—	11	8	+ 3,50	52,77	19. 39. 20	2	111. 18. 54,14	8,42	
706	δ Cygni.....	9		+ 9,32	29,71	19. 40. 23	1	45. 13. 30,00	8,50	
707	δ Cygni R. ....	9		+ 9,32	32,15		1	45. 13. 32,59		
708	H. C. 37846 .....	10	9	+ 3,50	12,76	19. 46. 20	1	114. 17. 13,97	8,97	
709	ω Sagittarii.....	8	6.7	+ 3,28	3,52					
710	—	11	8	+ 3,12	3,44	19. 46. 50	2	116. 41. 4,69	9,01	
711	H. C. 37873.....	Sept. 22		+ 2,78	27,68	19. 46. 50	1	109. 40. 28,89	9,01	
712	β Aquilæ.....	30		+ 10,43	22,55					
713	—	Oct. 1		+ 10,43	23,12	19. 48. 5	2	83. 57. 23,46	9,12	
714	β Aquilæ R. ....	Sept. 30		+ 10,43	(32,22)					
715	—	Oct. 1		+ 10,43	26,79		1	83. 57. 26,91		No. 714. Too discordant. See No. 702.
716	H. C. 38104.....	Aug. 8	7.8	+ 4,92	59,65	19. 52. 9	1	106. 17. 0,86	9,43	
717	H. C. 38161.....	Sept. 22	9.10	+ 3,66	7,04	19. 53. 25	1	107. 57. 8,25	9,53	
718	H. C. 38290.....	Aug. 8	9.10	+ 4,81	56,51	19. 56. 32	1	109. 10. 57,72	9,76	
719	τ Aquilæ .....	Oct. 3		+ 11,36	58,02	19. 56. 58	1	83. 7. 58,58	9,80	
720	τ Aquilæ R. ....	3		+ 11,36	60,07		1	83. 8. 0,28		
721	H. C. 38339.....	Sept. 22	10	+ 3,49	8,98	19. 57. 33	1	109. 7. 10,19	9,84	
722	H. C. 38398 .....	23	9	+ 3,33	28,40	19. 58. 49	1	109. 59. 29,61	9,94	
723	* .....	Oct. 1	8	+ 18,32	42,70	20. 1. 39	1	53. 35. 43,45	10,15	No. 723 and 724. The R.A. was found Oct. 24, 1859, by comparison with δ <sup>2</sup> Cygni, and the magnitude was considered to be 8. A comparison at the same time in N.P.D. shewed that the reflection observation is discordant.
724	* R .....	1		+ 18,32	(49,19)					
725	ρ Draconis.....	Aug. 24		+ 12,42	42,63	20. 2. 8	1	22. 32. 42,18	10,19	
726	ρ Draconis R. ....	24		+ 12,42	43,11		1	22. 32. 44,31		
727	B.A.C. 6953.....	Sept. 23	7.8	+ 4,69	20,20	20. 7. 42	1	106. 44. 21,41	10,60	
728	α <sup>1</sup> Capricorni.....	Aug. 11		+ 6,17	30,32					
729	—	13		+ 6,21	30,67	20. 9. 30	3	102. 57. 31,53	10,74	
730	—	Oct. 3		+ 5,62	29,99					
731	α <sup>1</sup> Capricorni R. ...	Aug. 11		+ 6,17	32,46					
732	—	13		+ 6,21	32,00		3	102. 57. 32,21		
733	—	Oct. 3		+ 5,62	33,52					
734	α <sup>2</sup> Capricorni.....	Aug. 11		+ 6,17	45,20					
735	—	12		+ 6,19	47,67					
736	—	13		+ 6,21	46,95	20. 9. 54	4	102. 59. 48,07	10,76	
737	—	Oct. 3		+ 5,63	47,67					
738	α <sup>3</sup> Capricorni R. ...	Aug. 11		+ 6,17	48,07					
739	—	12		+ 6,19	45,76		3	102. 59. 47,72		
740	—	13		+ 6,21	50,67					
741	32 Cygni .....	Sept. 22		+ 18,71	5,87	20. 10. 56	1	42. 44. 6,04	10,85	
742	32 Cygni R. ....	22		+ 18,71	6,01		1	42. 44. 6,56		
743	B.A.C. 6982.....	23	8.9	+ 2,07	39,40	20. 10. 57	1	115. 40. 40,61	10,85	
744	H. C. 38974.....	23	9	+ 2,14	2,81	20. 11. 37	1	115. 40. 4,02	10,90	No. 743. The R.A. is that of A. (o.) 20397, which is the same star. The R.A. of B.A.C. is about 1 <sup>st</sup> greater.
745	κ Cephei.....	Aug. 24		+ 11,25	60,26	20. 13. 45	1	12. 43. 59,86	11,06	
746	κ Cephei R. ....	24		+ 11,25	60,32		1	12. 44. 1,48		
747	B.A.C. 7016 .....	Sept. 23	8	+ 5,75	58,42	20. 16. 2	1	104. 34. 59,63	11,21	
748	B. (w.) xx. 419 .....	23	9	+ 5,81	48,70	20. 17. 18	1	104. 35. 49,91	11,31	
749	H. C. 39318.....	Oct. 3	9 $\frac{1}{4}$	+ 2,93	5,04	20. 19. 28	1	112. 29. 6,25	11,47	
750	H. C. 39419.....	Sept. 23	9	+ 4,08	48,81	20. 22. 9	1	111. 11. 50,02	11,66	No. 749. The N.P.D. of H. C. was verified by equatorial comparisons with H. C. 39154 on Oct. 26, 1859.
751	H. C. 39425.....	Oct. 20	8	+ 4,07	14,95	20. 22. 20	1	107. 2. 16,16	11,67	
752	H. C. 39450.....	July 22	8 $\frac{3}{4}$	+ 6,08	29,66	20. 23. 1	1	108. 34. 30,87	11,72	
753	B.A.C. 7069.....	Aug. 12	8	+ 5,89	50,39	20. 23. 37	1	112. 38. 51,60	11,76	No. 753. This is H. C. 39473, which is the same star as H. C. 39433, the R.A. of the latter being 1 <sup>st</sup> too small.
754	B.A.C. 7070.....	12	9	+ 5,89	15,57	20. 23. 39	1	112. 39. 16,78	11,76	
755	A. (o.) 20587.....	Oct. 3		+ 4,80	41,22	20. 23. 54	1	107. 29. 42,43	11,78	No. 754. The same star as H. C. 39435, the R.A. of which is 1 <sup>st</sup> too small.
756	θ Cephei.....	Sept. 22		+ 19,25	55,79	20. 27. 6	1	27. 29. 55,43	12,01	
757	θ Cephei R. ....	22		+ 19,25	55,95		1	27. 29. 57,05		
758	B.A.C. 7097.....	Oct. 20	7	+ 4,27	36,56	20. 27. 13	1	107. 1. 37,77	12,01	
759	B.A.C. 7102.....	Sept. 23	8 $\frac{3}{4}$	+ 4,40	23,02	20. 27. 56	1	111. 5. 24,23	12,07	
760	H. C. 39671.....	Aug. 12	8	+ 6,81	49,38	20. 28. 4	1	105. 48. 50,59	12,07	
761	H. C. 39688.....	Sept. 23	9 $\frac{1}{4}$	+ 4,46	14,59	20. 28. 29	1	111. 4. 15,80	-12,10	
762	α Delphini.....	Aug. 4		+ 7,26	11,38					



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
763	$\alpha$ Delphini.....	Oct. 3		+ 14,82	10,09	20. 32. 49	3	74. 36. 11,74	- 12,40	
764	—	20		+ 15,14	12,81					
765	$\alpha$ Delphini R.....	Aug. 4		+ 7,26	11,04					
766	—	Oct. 1		+ 14,73	13,39		4	74. 36. 13,30		
767	—	3		+ 14,82	14,64					
768	—	20		+ 15,14	12,33					
769	B. (w.) xx. 913....	Aug. 12	8½	+ 7,22	9,88	20. 35. 44	1	105. 30. 11,09	12,60	
770	$\alpha$ Cygni.....	18		+ 10,28	29,87					
771	—	20		+ 10,85	32,20	20. 36. 25	4	45. 14. 32,62	12,65	
772	—	Sept. 22		+ 18,46	33,40					
773	—	23		+ 18,63	32,85					
774	$\alpha$ Cygni R.....	Aug. 18		+ 10,28	34,76					
775	—	20		+ 10,85	33,39		4	45. 14. 34,57		No. 776. The mean from two bi-sections.
776	—	Sept. 22		+ 18,46	32,72					
777	—	23		+ 18,63	35,60					
778	B. (w.) xx. 932....	Aug. 11	9.10	+ 7,25	12,42	20. 36. 33	2	105. 29. 15,89	12,66	
779	—	12	8½	+ 7,25	16,93					
780	$\epsilon$ Aquarii.....	July 22		+ 6,45	47,37					
781	—	Aug. 24		+ 8,19	48,12	20. 39. 43	3	100. 1. 48,67	12,87	
782	—	Oct. 7		+ 7,76	46,98					
783	$\epsilon$ Aquarii R.....	July 22		+ 6,45	49,44					
784	—	Aug. 24		+ 8,19	50,41		3	100. 1. 50,46		
785	—	Oct. 7		+ 7,76	52,86					
786	B.A.C. 7202.....	Aug. 11	8½	+ 7,19	12,74	20. 40. 4	1	108. 44. 13,95	12,89	
787	H. C. 40125.....	11	8½	+ 7,19	19,67	20. 40. 5	1	108. 44. 20,88	12,90	No. 787. This is A. (o.) 20861. See note to Nos. 720—723 in p. 102.
788	$\epsilon$ Cygni.....	Oct. 18		+ 19,76	39,32	20. 40. 16	1	56. 34. 40,23	12,91	
789	$\epsilon$ Cygni R.....	18		+ 19,76	40,43		1	56. 34. 40,26		
790	H. C. 40152.....	Aug. 12	8¾	+ 7,23	33,94	20. 40. 58	1	108. 45. 35,15	12,96	
791	B. (w.) xx. 1068...	Oct. 3	9	+ 6,72	0,43	20. 41. 48	1	104. 11. 1,63	13,01	
792	H. C. 40256.....	20	7.8	+ 3,33	45,61	20. 43. 53	1	111. 46. 46,82	13,15	
793	H. C. 40363.....	3	9	+ 6,43	12,97	20. 46. 45	1	105. 50. 14,18	13,34	
794	H. C. 40386.....	Aug. 11	9	+ 7,56	(6,94)					No. 794 and 796. The latter agrees with the observation of Sept. 16, 1852: the other, being discordant, is not used in calculating the concluded N.P.D.
795	—	12	8½	+ 7,55	16,07	20. 47. 23	1	109. 8. 17,28	13,38	
796	H. C. 40410.....	Oct. 20	9	+ 4,91	4,40	20. 47. 52	1	107. 48. 5,61	13,41	
797	57 Cygni.....	Sept. 23		+ 18,63	1,77	20. 48. 3	1	46. 10. 2,12	13,42	
798	57 Cygni R.....	23		+ 18,63	0,39		1	46. 10. 0,78		
799	32 Vulpeculæ.....	Oct. 1		+ 17,62	53,46	20. 48. 18	1	62. 29. 54,55	13,44	
800	32 Vulpeculæ R...	1		+ 17,62	56,27		1	62. 29. 55,92		
801	B.A.C. 7263.....	7		+ 6,10	36,25	20. 49. 26	2	106. 35. 39,16	13,52	
802	—	18		+ 5,51	39,65					
803	B. (w.) xx. 1293...	3	7.8	+ 6,84	48,35	20. 50. 34	1	105. 2. 49,56	13,58	
804	$\nu$ Cygni.....	Aug. 4		+ 5,78	45,12	20. 51. 42	1	49. 23. 45,64	13,66	
805	$\nu$ Cygni R.....	4		+ 5,78	47,67		1	49. 23. 47,90		
806	H. C. 40622.....	11	10	+ 7,60	53,64	20. 52. 53	1	113. 38. 54,85	13,73	
807	B. (w.) xx. 1366...	Oct. 20	9.10	+ 6,03	5,14	20. 53. 29	1	105. 17. 6,35	13,77	
808	H. C. 40687.....	7	8.9	+ 6,52	44,17	20. 54. 24	1	106. 2. 45,38	13,83	No. 808. It was found Oct. 26, 1859, by equatorial comparisons with H. C. 40653, that the N.P.D. of H. C. 40687 is 5' too great.
809	B. (w.) xx. 1419...	25	7.8	+ 6,50	38,85	20. 55. 33	1	103. 25. 40,05	13,90	
810	B. (w.) xx. 1450...	Sept. 23	8	+ 7,59	29,82	20. 56. 49	1	105. 7. 31,03	13,98	
811	B. (w.) xx. 1465...	Oct. 18	8.9	+ 6,25	16,63	20. 57. 29	1	105. 29. 17,84	14,03	
812	H. C. 40850.....	20	9.10	+ 7,20	22,91	20. 58. 29	1	102. 32. 24,11	14,09	
813	H. C. 40861.....	1	8¼	+ 6,90	29,28	20. 58. 57	1	106. 33. 30,49	14,12	
814	B. (w.) xx. 1527...	7	9.10	+ 7,97	29,70	20. 59. 57	1	102. 16. 30,89	14,18	No. 814. Magnitude estimated in a foggy sky.
815	B. (w.) xxi. 28....	Sept. 23	9	+ 8,01	21,96	21. 2. 57	1	104. 39. 23,17	14,37	
816	B.A.C. 7352.....	Oct. 25	6	+ 6,27	11,52	21. 3. 34	1	105. 4. 12,73	14,40	
817	B. (w.) xxi. 52....	Sept. 23	9.10	+ 8,06	39,69	21. 3. 52	1	104. 38. 40,90	14,42	No. 817. The N.P.D. of Weisse's Catalogue is erroneous. See note to No. 713 in p. 400 of Vol. xviii.
818	H. C. 41070.....	Oct. 25	7.8	+ 6,26	23,45	21. 3. 58	1	105. 9. 24,66	14,43	
819	H. C. 41118.....	3		+ 8,38	12,93					
820	—	7	9.10	+ 8,22	15,24	21. 5. 2	2	102. 9. 15,28	14,49	No. 820. See No. 814.
821	$\delta$ Equulei.....	18		+ 14,60	10,11	21. 7. 19	1	80. 35. 10,46	14,63	
822	$\delta$ Equulei R.....	18		+ 14,60	9,07		1	80. 35. 9,47		
823	B. (w.) xxi. 164...	Sept. 23	9.10	+ 8,40	20,87	21. 8. 13	1	104. 10. 22,07	14,68	
824	30 Capricorni.....	Oct. 22	7	+ 5,48	52,67	21. 9. 42	1	108. 35. 53,88	14,77	
825	B. (w.) xxi. 222...	1	8.9	+ 8,51	41,75					
826	—	25	8.9	+ 7,33	42,27	21. 10. 29	2	102. 52. 43,21	14,82	No. 826. See the observer's note, and the note to Nos. 553 and 554 in p. 56.
827	B. (w.) xxi. 239...	Aug. 9	10	+ 8,92	44,52	21. 11. 18	1	103. 39. 45,72	14,86	
828	B. (w.) xxi. 258...	Oct. 3	9	+ 8,29	13,86	21. 12. 0	1	103. 36. 15,06	14,90	No. 827. This magnitude was estimated in a misty sky. The same remark applies to the subsequent observations of the same night.
829	B. (w.) xxi. 295...	18		+ 7,82	15,66	21. 13. 23	1	102. 56. 16,86	14,98	
830	B. (w.) xxi. 318...	25		+ 7,07	4,88	21. 14. 12	1	104. 3. 6,08	15,03	
831	$\alpha$ Cephei.....	Sept. 30		+ 20,47	8,18	21. 15. 4	1	28. 2. 7,83	- 15,08	No. 831. The mean from two bisec-tions.
832	$\alpha$ Cephei R.....	30		+ 20,47	9,16		1	28. 2. 10,25		



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
833	B. (w.) XXI. 357...	Oct. 3	9.10	+ 9.12	24.36	21. 15. 48	1	101. 19. 25.55	- 15.13	No. 837. See No. 827.
834	B. (w.) XXI. 378...	1	9	+ 9.16	51.87	21. 16. 39	1	101. 34. 53.06	15.17	
835	B. (w.) XXI. 383...	Sept. 23	9.10	+ 8.60	26.96	21. 16. 54	1	104. 59. 28.17	15.18	
836	B. (w.) XXI. 392...	23	7	+ 8.65	26.08	21. 17. 21	1	104. 54. 27.29	15.21	
837	B. (w.) XXI. 418...	Aug. 9	10.11	+ 9.24	6.84	21. 18. 26	2	102. 43. 10.06	15.28	
838	—	Oct. 22	8	+ 7.88	10.87					
839	B. (w.) XXI. 423...	22	9.10	+ 7.90	35.48	21. 18. 31	1	102. 39. 36.68	15.28	
840	B. (w.) XXI. 441...	25	7 $\frac{3}{4}$	+ 7.25	18.95	21. 19. 21	1	104. 13. 20.15	15.33	
841	B. (w.) XXI. 452...	25	9	+ 7.25	49.42	21. 19. 39	1	104. 11. 50.62	15.34	
842	B. (w.) XXI. 495...	22	9	+ 8.00	2.74	21. 21. 30	1	102. 43. 3.94	15.45	
843	H. C. 41760.....	3	7.8	+ 8.44	47.97	21. 21. 38	1	104. 39. 49.18	15.46	No. 848. See No. 827.
844	$\beta$ Aquarii.....	7		+ 10.70	52.98					
845	—	18		+ 10.38	54.07	21. 23. 49	2	96. 12. 54.68	15.58	
846	$\beta$ Aquarii R.....	7		+ 10.70	55.28					
847	—	18		+ 10.38	55.84		2	96. 12. 55.16		
848	B. (w.) XXI. 570...	Aug. 9	11	+ 9.51	57.62	21. 24. 38	1	104. 4. 58.82	15.62	
849	B. (w.) XXI. 572...	Oct. 25	9.10	+ 8.49	30.26	21. 24. 41	1	101. 11. 31.45	15.62	
850	B. (w.) XXI. 592...	Aug. 9	10	+ 9.55	52.35					
851	—	Oct. 3		+ 8.78	50.79	21. 25. 33	2	104. 5. 52.77	15.67	
852	B.A.C. 7487.....	3		+ 8.80	59.13	21. 26. 15	1	104. 8. 0.33	15.71	No. 850. See No. 827.
853	B.A.C. 7491.....	22	8	+ 5.47	2.92	21. 26. 39	1	110. 54. 4.13	15.73	
854	$\beta$ Cephei.....	Aug. 10		+ 3.43	62.05					
855	—	Sept. 23		+ 18.16	64.99	21. 26. 45	3	20. 5. 2.70	15.74	
856	—	Oct. 1		+ 20.28	62.49					
857	$\beta$ Cephei R.....	Aug. 10		+ 3.43	60.60					
858	—	Sept. 23		+ 18.16	60.70		3	20. 5. 1.00		
859	—	Oct. 1		+ 20.28	58.07					
860	H. C. 42043.....	3	9	+ 8.91	45.08	21. 28. 44	1	104. 6. 46.28	15.84	
861	B. (w.) XXI. 717...	Nov. 1	8.9	+ 7.80	9.23	21. 30. 20	1	102. 42. 10.43	15.93	No. 872. The proper motion in B.A.C. is not confirmed by a comparison of this observation with Piazz.
862	B. (w.) XXI. 719...	Oct. 22	9	+ 9.31	43.25	21. 30. 31	1	99. 54. 44.43	15.94	
863	B. (w.) XXI. 775...	7	8 $\frac{1}{4}$	+ 9.88	9.21	21. 32. 34	1	100. 39. 10.40	16.04	
864	H. C. 42219.....	18		+ 9.66	23.50	21. 33. 7	1	99. 48. 24.68	16.08	
865	B. (w.) XXI. 830...	22	9	+ 9.72	55.16	21. 34. 39	1	99. 7. 56.34	16.16	
866	B. (w.) XXI. 844...	22	10	+ 9.76	6.44	21. 34. 59	1	99. 4. 7.62	16.17	
867	B. (w.) XXI. 861...	3	9 $\frac{1}{4}$	+ 9.85	24.89	21. 35. 39	1	101. 48. 26.08	16.21	
868	$\pi^1$ Cygni.....	Aug. 10		+ 5.16	46.17					
869	—	20		+ 8.50	45.10	21. 36. 53	2	39. 28. 45.69	16.27	
870	$\pi^1$ Cygni R.....	10		+ 5.16	48.29					Nos. 872 and 873. The observer considered the magnitudes doubtful on account of fog.
871	—	20		+ 8.50	49.13		2	39. 28. 49.41		
872	B.A.C. 7562.....	Oct. 7	8	+ 10.31	31.53	21. 37. 5	1	99. 42. 32.71	16.28	
873	$c^1$ Capricorni.....	7	6.7	+ 10.32	15.60	21. 37. 10	1	99. 45. 16.78	16.28	
874	H. C. 42467.....	Nov. 1	9	+ 8.94	34.01	21. 40. 5	1	100. 32. 35.20	16.44	
875	$\nu$ Cephei.....	Oct. 1		+ 20.35	21.74	21. 41. 13	1	29. 33. 21.43	16.49	
876	$\nu$ Cephei R.....	1		+ 20.35	21.17		1	29. 33. 22.22		
877	B. (w.) XXI. 988...	3	9 $\frac{1}{4}$	+ 9.47	28.82	21. 41. 29	1	104. 16. 30.02	16.50	
878	B. (w.) XXI. 1025...	7	9	+ 10.89	32.32	21. 43. 15	1	98. 35. 33.50	16.59	
879	B. (w.) XXI. 1038...	Aug. 10	9	+ 10.41	56.63	21. 43. 53	1	104. 36. 57.84	16.62	
880	B. (w.) XXI. 1060...	10	9	+ 10.46	47.68					No. 901. The R.A. was ascertained Oct. 26, 1859, by comparison with H. C. 43186. This comparison and another of H. C. 43186 with H. C. 43180, shewed that the N.P.D. of H. C. 43186 is about 34" too small.
881	—	Nov. 1	9 $\frac{1}{4}$	+ 7.70	45.65	21. 44. 50	2	104. 36. 47.88	16.67	
882	$\mu$ Capricorni.....	Oct. 3	6	+ 9.65	26.82	21. 45. 17	1	104. 14. 28.02	16.69	
883	B. (w.) XXI. 1126...	3	8 $\frac{3}{4}$	+ 9.66	45.22					
884	—	7	9	+ 9.43	44.62	21. 48. 9	2	104. 43. 46.13	16.83	
885	B.A.C. 7639.....	22	7	+ 7.22	32.98	21. 48. 40	1	108. 35. 34.19	16.85	
886	B.A.C. 7640.....	Aug. 10	7.8	+ 10.72	11.45					
887	—	Nov. 1	7.8	+ 7.47	9.86	21. 49. 47	2	105. 49. 11.87	16.91	
888	B. (w.) XXI. 1174...	1	9	+ 7.51	21.06	21. 50. 12	1	105. 47. 22.27	16.92	
889	B.A.C. 7651.....	Sept. 24		+ 18.26	14.97	21. 50. 57	1	29. 9. 14.65	16.96	
890	B.A.C. 7651 R.....	24		+ 18.26	13.58		1	29. 9. 14.64		
891	H. C. 42841.....	Aug. 10	8 $\frac{3}{4}$	+ 10.79	1.41					
892	—	Nov. 1	8.9	+ 7.56	1.27	21. 51. 19	2	105. 47. 2.55	16.98	
893	B.A.C. 7665.....	Oct. 22	7	+ 7.46	23.20	21. 54. 6	1	108. 36. 24.41	17.11	
894	H. C. 42937.....	18	7.8	+ 10.46	16.25	21. 54. 19	1	99. 59. 17.43	17.11	
895	H. C. 42960.....	22	9.10	+ 10.84	44.90	21. 55. 5	1	98. 8. 46.07	17.15	
896	H. C. 42968.....	22	9	+ 10.85	2.39	21. 55. 19	1	98. 10. 3.56	17.16	
897	$\alpha$ Aquarii.....	7		+ 13.33	53.48	21. 58. 14	1	91. 1. 54.50	17.29	
898	$\alpha$ Aquarii R.....	7		+ 13.33	55.37		1	91. 1. 55.11		
899	B. (w.) XXI. 1354...	Aug. 10	9	+ 11.07	1.28	21. 58. 32	1	104. 48. 2.49	17.30	
900	B.A.C. 7697.....	Nov. 1	9	+ 9.44	44.43	21. 59. 29	1	101. 9. 45.62	17.35	
901	* .....	Oct. 18	9	+ 11.25	6.68	22. 0. 10	1	98. 4. 7.85	- 17.38	



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
902	B. (w.) xxii. 15....	Oct. 22	10	+ 8,87	47,78	22. 1. 46	1	105. 16. 48,99	- 17,45	
903	B. (w.) xxii. 87....	Aug. 10	7	+ 10,81	37,49					
904		Oct. 18	7	+ 11,70	38,23	22. 4. 58	2	97. 11. 39,02	17,58	
905	B. (w.) xxii. 91....	Nov. 1	8	+ 8,52	42,15	22. 5. 11	1	104. 35. 43,36	17,59	
906	B. (w.) xxii. 116..	Oct. 22	8.9	+ 9,78	55,11	22. 6. 39	1	102. 58. 56,31	17,65	
907	B. (w.) xxii. 213..	18	9	+ 11,12	51,96					
908		22	9.10	+ 10,89	50,23	22. 11. 3	3	99. 56. 51,95	17,83	
909		Nov. 1	9	+ 10,29	50,11					
910	B. (w.) xxii. 230..	17	9.10	+ 8,33	4,54	22. 11. 43	1	102. 39. 5,54	17,86	
911	B. (w.) xxii. 304..	Oct. 25	8	+ 9,31	4,91	22. 15. 14	1	104. 57. 6,12	17,99	
912	B. (w.) xxii. 336..	18	7.8	+ 11,04	20,84					
913		Nov. 1	7	+ 10,16	20,54	22. 16. 22	2	100. 56. 21,88	18,04	
914	B. (w.) xxii. 345..	Oct. 22	9	+ 10,92	34,49	22. 16. 42	1	100. 32. 35,68	18,05	
915	B. (w.) xxii. 388..	Nov. 8	9	+ 8,87	41,03	22. 18. 18	1	103. 32. 42,23	18,11	
916	54 Aquarii.....	17	8	+ 8,81	24,82	22. 18. 53	1	101. 58. 26,01	18,13	
917	B. (w.) xxii. 429..	1	8	+ 11,70	11,68	22. 20. 11	1	96. 39. 12,84	18,18	
918	B. (w.) xxii. 434..	1	8.9	+ 11,69	10,93	22. 20. 19	1	96. 41. 12,09	18,19	
919	B. (w.) xxii. 444..	Oct. 25	9.10	+ 10,15	41,89	22. 20. 58	1	102. 58. 43,09	18,21	
920	B. (w.) xxii. 452..	22	9	+ 11,16	44,74	22. 21. 33	1	100. 24. 45,92	18,23	
921	σ Aquarii.....	Nov. 17	5.6	+ 9,12	41,35	22. 22. 52	1	101. 25. 42,54	18,28	
922	B. (w.) xxii. 484..	17	9 $\frac{1}{4}$	+ 9,16	36,80	22. 23. 5	1	101. 22. 37,99	18,29	
923	B. (w.) xxii. 487..	17	9 $\frac{1}{4}$	+ 9,18	25,89	22. 23. 19	1	101. 21. 27,08	18,30	
924	B. (w.) xxii. 531..	Oct. 25	9.10	+ 11,24	1,86	22. 25. 24	1	99. 53. 3,04	18,37	
925	B. (w.) xxii. 547..	Nov. 1	9	+ 9,87	55,09	22. 26. 16	1	102. 54. 56,29	18,40	
926	B. (w.) xxii. 548..	Oct. 22	8.9	+ 12,71	30,18	22. 26. 16	1	95. 38. 31,32	18,40	
927	B. (w.) xxii. 602..	25	9	+ 11,05	54,64	22. 28. 53	1	101. 2. 55,83	18,49	
928	B. (w.) xxii. 619..	25	9	+ 11,08	49,14	22. 29. 29	1	101. 1. 50,33	18,51	
929	B. (w.) xxii. 640..	22	9 $\frac{1}{4}$	+ 10,21	10,51	22. 30. 39	2	104. 49. 12,89	18,55	
930		Nov. 1	9	+ 9,43	12,84					
931	B. (w.) xxii. 644..	Oct. 22	8.9	+ 10,20	46,00	22. 30. 44	2	104. 49. 47,85	18,55	
932		Nov. 1	8 $\frac{1}{4}$	+ 9,41	47,28					
933	*.....	1	9 $\frac{1}{4}$	+ 9,43	59,99	22. 30. 44	1	104. 48. 1,20	18,55	No. 933. This star follows B. (w.)
934	B. (w.) xxii. 694..	17	9 $\frac{1}{4}$	+ 10,80	55,39	22. 32. 36	1	97. 33. 56,56	18,62	xxii. 644 by 0 $\frac{1}{2}$ , as found by an equa-
935	ζ Pegasi.....	8		+ 17,03	4,34	22. 34. 8	1	79. 56. 4,65	18,66	torial comparison on Oct. 26, 1859.
936	ζ Pegasi R.....	8		+ 17,03	4,31		1	79. 56. 4,69		
937	B. (w.) xxii. 752..	Aug. 27	8	+ 12,99	15,65					
938		Oct. 25	8.9	+ 11,62	14,63	22. 35. 17	2	99. 55. 16,32	18,70	
939	B. (w.) xxii. 774..	22	9.10	+ 11,87	30,20					
940		Nov. 17	9.10	+ 10,14	29,93	22. 36. 30	2	99. 47. 31,25	18,74	
941	τ <sup>1</sup> Aquarii.....	Oct. 18	6	+ 10,89	46,78	22. 39. 54	1	104. 49. 47,99	18,84	
942	H. C. 44601.....	25	10	+ 13,67	49,34	22. 40. 20	1	93. 20. 50,43	18,86	
943	B. (w.) xxii. 864..	22	9.10	+ 12,06	1,22	22. 41. 13	1	99. 43. 2,40	18,88	
944	τ <sup>2</sup> Aquarii.....	Nov. 17	4.5	+ 8,71	0,13	22. 41. 48	1	104. 22. 1,33	18,90	
945	B. (w.) xxii. 889..	Aug. 27	10	+ 13,02	3,83	22. 42. 9	1	93. 8. 4,91	18,91	
946	B. (w.) xxii. 896..	Nov. 1	8	+ 11,92	10,92	22. 42. 34	1	98. 14. 12,09	18,92	
947	B. (w.) xxii. 914..	Oct. 25	9	+ 12,04	59,94	22. 43. 37	1	99. 26. 1,12	18,95	
948	λ Aquarii.....	31	3	+ 12,00	36,89	22. 44. 57	1	98. 21. 38,06	18,99	
949	B. (w.) xxii. 961..	Nov. 18	9	+ 12,68	5,61	22. 45. 55	1	93. 5. 6,69	19,02	
950	B. (w.) xxii. 987..	Aug. 27	8	+ 13,37	14,63	22. 47. 30	1	98. 19. 15,80	19,06	
951	B. (w.) xxii. 999..	Oct. 22	8	+ 13,20	2,58	22. 47. 53	1	96. 22. 3,73	19,07	
952	B. (w.) xxii. 1109..	Aug. 27	9	+ 13,41	23,01	22. 53. 1	1	95. 20. 24,15	19,20	
953	α Pegasi.....	Oct. 20		+ 18,27	3,21					
954		Nov. 9		+ 18,77	4,80					
955		10		+ 18,76	3,69					
956		11		+ 18,75	4,18					
957		14		+ 18,72	3,37	22. 57. 26	9	75. 35. 4,56	19,31	
958		17		+ 18,69	5,63					
959		18		+ 18,66	3,91					
960		19		+ 18,63	4,83					
961		21		+ 18,57	5,00					
962	α Pegasi R.....	9		+ 18,77	3,07					
963		10		+ 18,76	3,87					
964		11		+ 18,75	4,58					
965		14		+ 18,72	3,03					
966		17		+ 18,69	3,11		8	75. 35. 4,02		
967		18		+ 18,66	2,61					
968		19		+ 18,63	4,51					
969		21		+ 18,57	3,55					
970	h <sup>1</sup> Aquarii.....	Oct. 18	6	+ 13,17	10,47	22. 57. 30	1	98. 29. 11,64	- 19,31	No. 970 and 971. The magnitudes considered doubtful on account of cloud.



Reference Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1853, as observed.	Approximate R.A. Jan. 1, 1853.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1853.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
971	$\beta^2$ Aquarii.....	Oct. 18	8 $\frac{1}{4}$	+13.17	47.73	22.57.40	1	98.32.48.91	-19.32	
972	B. (w.) XXIII. 1237..	3	9 $\frac{3}{4}$	+14.79	43.05	22.58.25	1	92.52.44.13	19.34	
973	B. (w.) XXIII. 38..	3	9 $\frac{1}{4}$	+15.29	33.55	23.3.19	1	90.22.34.55	19.45	
974	B. (w.) XXIII. 83..	Nov. 18	9 $\frac{1}{4}$	+11.27	33.90	23.5.42	1	98.47.35.08	19.49	
975	$\chi$ Aquarii.....	21	6	+11.22	37.96	23.9.14	1	98.31.39.14	19.56	
976	B. (w.) XXIII. 187..	1	8	+14.45	11.71	23.10.1	1	92.19.12.78	19.58	
977	$\sigma$ Cephei.....	Oct. 1		+16.87	31.49	23.12.36	1	22.41.31.04	19.63	
978	$\sigma$ Cephei R.....	1		+16.87	31.48		1	22.41.32.67		
979	B. (w.) XXIII. 261..	Nov. 19	9 $\frac{1}{4}$	+11.87	17.54	23.13.2	1	97.15.18.70	19.63	
980	$\tau$ Pegasi.....	10		+21.19	45.12					
981	—	14		+21.30	45.82	23.13.22	3	67.3.46.98	19.64	
982	—	18		+21.35	47.04					
983	$\tau$ Pegasi R.....	10		+21.19	49.93					
984	—	14		+21.30	48.23		3	67.3.48.40		
985	—	18		+21.35	47.81					
986	B. (w.) XXIII. 285..	1	9.10	+12.70	39.61	23.14.4	2	98.53.40.97	19.65	
987	—	21	9	+11.24	39.97					
988	B. (w.) XXIII. 289..	19	9 $\frac{1}{4}$	+11.94	17.41	23.14.18	1	97.17.18.57	19.66	
989	B. (w.) XXIII. 294..	21	9.10	+11.26	35.09	23.14.39	1	98.51.36.27	19.66	
990	H. C. 45758.....	Oct. 25	8.9	+15.13	34.41	23.14.49	1	91.12.35.44	19.67	
991	B. (w.) XXIII. 323nf.	Nov. 9	8.9	+12.08	54.71	23.16.9	1	99.15.55.89	19.69	
992	B. (w.) XXIII. 399..	14	8	+15.09	17.50	23.20.12	1	88.55.18.42	19.75	
993	B. (w.) XXIII. 406..	1	8.9	+14.45	5.28					
994	—	19	9	+13.42	4.80	23.20.32	3	93.16.6.64	19.76	
995	—	21		+13.29	6.57					
996	B. (w.) XXIII. 409..	1	8 $\frac{1}{4}$	+14.45	26.05					
997	—	19	8.9	+13.43	25.53	23.20.35	3	93.15.26.68	19.76	
998	—	21	8.9	+13.30	25.18					
999	B. (w.) XXIII. 427..	9	7	+11.97	26.71	23.21.25	1	100.4.27.89	19.77	
1000	11 Piscium.....	Oct. 25	7	+14.95	57.94	23.21.54	1	92.35.59.01	19.78	
1001	B. (w.) XXIII. 516..	Nov. 14	9	+11.62	36.58	23.25.34	1	100.16.37.76	19.83	
1002	14 Piscium.....	Oct. 28	6	+15.06	30.30	23.26.35	1	92.3.31.36	19.84	
1003	B. (w.) XXIII. 550..	25	8.9	+15.42	10.72	23.26.57	1	91.8.11.74	19.85	
1004	B. (w.) XXIII. 591..	25	9 $\frac{1}{4}$	+15.45	28.00	23.28.41	2	91.7.29.89	19.87	
1005	—	Nov. 21	9 $\frac{1}{4}$	+14.16	29.73					
1006	$\lambda$ Andromedæ.....	Oct. 1		+17.34	14.77	23.30.23	1	44.20.15.01	19.89	
1007	$\lambda$ Andromedæ R...	1		+17.34	15.03		1	44.20.15.51		
1008	B. (w.) XXIII. 664..	Nov. 18	8	+12.73	36.35	23.32.17	1	96.21.37.50	19.91	
1009	$\iota$ Piscium.....	9		+16.20	10.51	23.32.23	2	85.10.11.87	19.91	
1010	—	17		+15.96	11.76					
1011	$\iota$ Piscium R.....	9		+16.20	9.87		2	85.10.10.40		
1012	—	17		+15.96	10.91					
1013	B. (w.) XXIII. 702..	21	8 $\frac{3}{4}$	+11.46	13.88	23.34.2	1	99.38.15.06	19.93	
1014	B. (w.) XXIII. 713..	21	8 $\frac{1}{4}$	+11.48	27.62	23.34.49	1	99.38.28.80	19.94	
1015	B. (w.) XXIII. 748..	Oct. 28	8.9	+16.09	9.45	23.36.38	1	88.40.10.36	19.95	
1016	$\psi$ Andromedæ.....	1		+17.03	40.69	23.38.46	1	44.23.40.93	19.97	
1017	$\psi$ Andromedæ R..	1		+17.03	43.43		1	44.23.43.91		
1018	B. (w.) XXIII. 808..	Nov. 21	9	+15.39	39.33	23.39.48	1	87.55.40.21	19.98	
1019	20 Piscium.....	9	7.8	+14.35	40.61	23.40.23	1	93.34.41.71	19.98	
1020	B. (w.) XXIII. 874..	Oct. 28	9	+16.13	54.21	23.42.50	1	88.53.55.13	20.00	
1021	B. (w.) XXIII. 922..	Nov. 9	9.10	+15.43	34.13	23.45.19	1	90.5.35.11	20.01	
1022	B. (w.) XXIII. 956..	18	7	+15.85	16.45	23.46.48	1	87.8.17.29	20.02	
1023	B. (w.) XXIII. 976..	Oct. 28	8.9	+16.48	38.41	23.47.50	1	87.34.39.27	20.03	
1024	B. (w.) XXIII. 980..	Nov. 21	8 $\frac{1}{4}$	+15.70	15.99	23.48.4	1	87.18.16.84	20.03	
1025	B. (w.) XXIII. 989..	21	9	+15.72	23.46	23.48.27	1	87.16.24.31	20.03	
1026	$\psi$ Pegasi.....	10		+21.51	29.61	23.50.17	1	65.40.30.65	20.04	
1027	$\psi$ Pegasi R.....	10		+21.51	31.88		1	65.40.31.57		
1028	B. (w.) XXIII. 1066.	18	9	+16.11	23.83	23.52.5	1	86.39.24.64	20.04	
1029	B. (w.) XXIII. 1088.	Oct. 28	8	+15.13	30.38	23.53.0	1	94.7.31.49	20.05	
1030	30 Piscium.....	Nov. 21	5	+12.79	51.24	23.54.25	1	96.49.52.40	20.05	
1031	B. (w.) XXIII. 1207.	Oct. 28	8	+15.54	12.61	23.58.42	1	92.42.13.68	-20.05	

No. 1013. Bessel's N.P.D. is confirmed by a Circle observation on Sept. 26, 1854.



HORIZONTAL AND VERTICAL MEASURES  
OF  
THE DIAMETER OF THE SUN,  
COMPARED WITH TABULAR DIAMETERS:  
AND  
RIGHT ASCENSIONS AND NORTH POLAR DISTANCES  
OF THE SUN,  
AND THE PLANETS EUTERPE, METIS, THETIS, ASTRÆA, IRENE,  
CALLIOPE, HYGEIA, AND NEPTUNE,  
CONCLUDED FROM  
OBSERVATIONS WITH THE TRANSIT AND MURAL CIRCLE,  
AND COMPARED WITH  
CALCULATED RIGHT ASCENSIONS AND NORTH POLAR DISTANCES.

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1853.



SIDEREAL INTERVALS occupied by TRANSITS of the SUN'S DIAMETER, and VERTICAL DIAMETERS of the SUN corrected for REFRACTION and PARALLAX; compared with the values in the NAUTICAL ALMANAC.

Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .	Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .
1853.	m. s.	s.	s.	" "	" "	" "	1853.	m. s.	s.	s.	" "	" "	" "
Jan. 5	2. 21,47	21,56	+ 0,09	32. 35,30	34,53	- 0,77	June 24	2. 17,66	17,75	+ 0,09	31. 27,64	30,39	+ 2,75
8	21,16	21,16	0,00	32,62	34,33	+ 1,71	29	17,57	17,53	- 0,04	28,95	30,19	+ 1,24
11	20,80	20,68	- 0,12	34,92	33,93	- 0,99	July 1				29,01	29,99	+ 0,98
13	20,30	20,36	+ 0,06	35,25	33,73	- 1,52	4	17,25	17,17	- 0,08	28,59	29,99	+ 1,40
14				33,08	33,53	+ 0,45	6				31,09	29,99	- 1,10
17	19,45	19,63	+ 0,18				7	17,05	16,87	- 0,18	27,92	30,19	+ 2,27
18	19,37	19,43	+ 0,06	31,39	32,93	+ 1,54	20				28,32	31,59	+ 3,27
20	18,95	19,01	+ 0,06	39,01	32,73	(- 6,28)	23	14,61	14,65	+ 0,04	29,30	31,99	+ 2,69
22	18,45	18,57	+ 0,12				25	14,12	14,31	+ 0,19	32,81	32,39	- 0,42
27	17,50	17,47	- 0,03	29,81	31,13	+ 1,32	26				31,10	32,59	+ 1,49
31	16,49	16,55	+ 0,06	27,66	29,93	+ 2,27	30	13,50	13,47	- 0,03	30,59	33,59	+ 3,00
Feb. 2	15,91	16,09	+ 0,18	27,74	29,33	+ 1,59	Aug. 4	12,66	12,61	- 0,05	31,52	34,79	+ 3,27
5	15,25	15,41	+ 0,16	26,90	28,33	+ 1,43	5	12,62	12,43	- 0,19	34,05	34,99	+ 0,94
11	13,88	14,05	+ 0,17	25,46	26,14	+ 0,68	6	12,16	12,25	+ 0,09	36,71	35,39	- 1,32
15	13,19	13,19	0,00				8				36,44	35,99	- 0,45
16	13,04	12,99	- 0,05	22,46	24,14	+ 1,68	9	11,90	11,77	- 0,13	37,72	36,39	- 1,33
19	12,32	12,39	+ 0,07	20,73	22,94	+ 2,21	10	11,47	11,61	+ 0,14	39,60	36,59	- 3,01
23	11,75	11,65	- 0,10	19,00	21,14	+ 2,14	11	11,55	11,43	- 0,12	42,59	36,99	- 5,60
25	11,32	11,29	- 0,03	18,05	20,14	+ 2,09	13	10,87	11,11	+ 0,24	36,15	37,78	+ 1,63
28	10,86	10,81	- 0,05	18,34	18,74	+ 0,40	17	10,42	10,49	+ 0,07	39,59	39,18	- 0,41
Mar. 9	9,60	9,66	+ 0,06	12,43	13,95	+ 1,52	22	9,65	9,78	+ 0,13			
11	9,63	9,46	- 0,17	11,64	12,95	+ 1,31	24	9,51	9,54	+ 0,03	41,60	41,98	+ 0,38
12	9,25	9,36	+ 0,11				25	9,49	9,42	- 0,07	41,11	42,38	+ 1,27
19	8,77	8,92	+ 0,15	8,19	8,75	+ 0,56	26	9,37	9,30	- 0,07	43,45	42,78	- 0,67
22	8,88	8,82	- 0,06	6,23	7,15	+ 0,92	Sept. 22	8,14	8,08	- 0,06	57,17	56,17	- 1,00
29	8,64	8,80	+ 0,16	6,22	3,36	- 2,86	23	8,08	8,10	+ 0,02	58,13	56,77	- 1,36
30	8,83	8,80	- 0,03	1,46	2,76	+ 1,30	26	8,38	8,24	- 0,14	59,48	58,36	- 1,12
31	8,78	8,82	+ 0,04	4,35	2,16	- 2,19	30				59,90	60,56	+ 0,66
Apr. 1	8,93	8,86	- 0,07	32. 1,44	1,56	+ 0,12	Oct. 3	8,77	8,80	+ 0,03	2,95	2,16	- 0,79
7	9,16	9,14	- 0,02				12	9,98	9,92	- 0,06	7,33	7,15	- 0,18
8	9,01	9,20	+ 0,19				13	10,06	10,08	+ 0,02	7,08	7,75	+ 0,67
12	9,51	9,52	+ 0,01	31. 56,35	55,57	- 0,78	14	10,23	10,23	0,00	5,17	8,35	+ 3,18
13	9,56	9,62	+ 0,06	56,25	54,97	- 1,28	15	10,43	10,39	- 0,04	7,43	8,95	+ 1,52
18	10,32	10,18	- 0,14	53,59	52,37	- 1,22	18	10,99	10,91	- 0,08	11,	10,55	- 1,12
23	10,72	10,81	+ 0,09				20	11,31	11,27	- 0,04	9,56	11,55	+ 2,19
27	11,29	11,37	+ 0,08				22	11,89	11,65	- 0,24	12,91	12,75	- 0,16
28	11,57	11,51	- 0,06	48,72	47,37	- 1,35	24				13,39	13,75	+ 0,36
May 2				44,04	45,38	+ 1,34	31	13,59	13,57	- 0,02	14,68	17,34	+ 2,66
5	12,63	12,59	- 0,04	43,93	43,98	+ 0,05	Nov. 1	13,93	13,81	- 0,12	15,75	17,74	+ 1,99
11	13,68	13,59	- 0,09	42,18	41,38	- 0,80	2	13,97	14,03	+ 0,06	16,33	18,34	+ 2,01
16	14,34	14,41	+ 0,07	40,24	39,38	- 0,86	8	15,46	15,45	- 0,01	26,11	21,34	- 4,77
17	14,54	14,57	+ 0,03	42,65	39,18	- 3,47	12	16,29	16,41	+ 0,12	23,40	22,94	- 0,46
18	15,54	14,73	(- 0,81)	37,68	38,78	+ 1,10	16	17,69	17,35	- 0,34	22,62	24,74	+ 2,12
19	15,32	14,89	- 0,43				17	17,60	17,59	- 0,01	26,16	25,14	- 1,02
21	15,09	15,19	+ 0,10	35,73	37,78	+ 2,05	21	18,47	18,49	+ 0,02	23,99	26,74	+ 2,75
24	16,20	15,65	- 0,55	35,39	36,79	+ 1,40	Dec. 2	20,70	20,66	- 0,04	31,74	30,13	- 1,61
25	16,10	15,79	- 0,31	36,31	36,39	+ 0,08	5	21,09	21,14	+ 0,05	29,99	31,13	+ 1,14
26	16,18	15,93	- 0,25	35,12	35,99	+ 0,87	9	21,80	21,66	- 0,14	32,65	32,13	- 0,52
27	16,28	16,07	- 0,21	35,32	35,79	+ 0,47	14	22,03	22,14	+ 0,11	32,75	33,13	+ 0,38
June 8	17,48	17,33	- 0,15	33,56	32,59	- 0,97	16	22,68	22,28	- 0,40	37,07	33,53	- 3,54
11	17,68	17,53	- 0,15	35,50	31,99	- 3,51	23	22,71	22,42	- 0,29	32,66	34,33	+ 1,67
15				32,98	31,39	- 1,59	27	22,28	22,34	+ 0,06	33,05	34,53	+ 1,48
16	17,96	17,75	- 0,21	31,71	31,19	- 0,52	29	22,25	22,24	- 0,01	35,92	34,53	- 1,39
17	17,98	17,79	- 0,19	35,10	30,99	- 4,11	31	2. 22,16	22,10	- 0,06	31. 33,61	34,53	+ 0,92
20	2. 17,92	17,81	- 0,11	31. 26,93	30,79	+ 3,86							

Jan. 17. The transit of each Limb at only two wires.

Jan. 20. The N.P.D. of the N.L. was discordant.

Apr. 7. The transit of 2 L at only two wires.

May 18. The transit of 2 L is too discordant.

July 26, 29, and Aug. 8. The transits are not used for measures of the diameter, one of the Limbs being taken at only two wires.



Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.	
d.	h.	m.	s.		m.	s.	h.	m.	s.	s.	s.	"	"	"	°	'	"	"	"
Jan.	5.	0.	5.26,5				19.	5.	47,93	47,69	-0,24		8,39		112.	35.	47,93	47,51	-0,42
	8.	0.	6.44,7				19.	18.	56,04	55,90	-0,14		8,38		112.	13.	6,68	6,33	-0,35
	11.	0.	7.58,1				19.	31.	59,34	59,36	+0,02		8,36		111.	46.	27,99	29,75	+1,76
	13.	0.	8.44,4				19.	40.	38,83	38,66	-0,17		8,35		111.	26.	38,27	37,97	-0,30
	14.	0.	9. 6,4	II.	1. 10,09		19.	44.	57,47	57,32	-0,15		8,34		111.	16.	3,04	4,67	+1,63
	17.	0.	10. 8,7				19.	57.	49,60	49,12	(-0,48)								
	18.	0.	10.27,6				20.	2.	5,16	4,92	-0,24		8,30		110.	29.	49,46	49,90	+0,44
	20.	0.	11. 3,7				20.	10.	34,44	34,27	-0,17		8,28		110.	4.	19,14	22,11	+2,97
	22.	0.	11.36,9				20.	19.	0,82	0,49	-0,33								
	27.	0.	12.45,5				20.	39.	52,43	52,11	-0,32		8,19		108.	23.	46,69	46,65	-0,04
	31.	0.	13.26,0				20.	56.	19,23	18,93	-0,30		8,13		107.	18.	51,87	51,97	+0,10
Feb.	2.	0.	13.41,3				21.	4.	27,66	27,50	-0,16		8,10		106.	44.	32,44	32,98	+0,54
	5.	0.	13.58,6				21.	16.	34,74	34,32	-0,42		8,04		105.	50.	52,56	53,79	+1,23
	11.	0.	14.10,7				21.	40.	26,15	26,31	+0,16		7,92		103.	56.	26,47	26,41	-0,06
	15.	0.	14. 3,7				21.	56.	5,34	5,28	-0,06	S.	7,84	16. 12,27	102.	35.	26,75	27,73	+0,98
	16.	0.	13.59,9				21.	59.	58,15	58,13	-0,02		7,80		102.	14.	43,25	42,03	-1,22
	19.	0.	13.44,7				22.	11.	32,49	32,34	-0,15		7,73		101.	11.	18,38	16,84	-1,54
	23.	0.	13.14,6				22.	26.	48,53	48,43	-0,10		7,62		99.	44.	19,78	20,45	+0,67
	25.	0.	12.55,8				22.	34.	22,86	22,73	-0,13		7,56		98.	59.	58,19	58,05	-0,14
	28.	0.	12.23,5				22.	45.	40,06	39,98	-0,08		7,47		97.	52.	25,46	25,16	-0,30
Mar.	9.	0.	10.21,0				23.	19.	6,24	6,24	0,00		7,18		94.	24.	15,69	16,97	+1,28
	11.	0.	9.49,6				23.	26.	27,82	27,78	-0,04		7,11		93.	37.	16,35	14,67	-1,68
	12.	0.	9.33,4				23.	30.	8,16	8,06	-0,10								
	15.	0.	8.42,8	I.	1. 4,57		23.	41.	7,09	7,17	+0,08	S.	6,99	16. 5,48	92.	2.	44,21	42,67	-1,54
	19.	0.	7.32,4				23.	55.	42,66	42,60	-0,06		6,82		90.	27.	56,16	54,87	-1,29
	22.	0.	6.37,8				0.	6.	37,61	37,38	-0,23		6,71		89.	16.	53,76	53,07	-0,69
	26.	0.	5.23,4	II.	1. 4,38		0.	21.	9,19	9,19	0,00								
	29.	0.	4.27,9				0.	32.	3,22	2,97	-0,25		6,43		86.	32.	17,43	18,17	+0,74
	30.	0.	4. 9,3				0.	35.	41,09	41,01	-0,08		6,39		86.	9.	0,39	0,07	-0,32
	31.	0.	3.50,8				0.	39.	19,16	19,13	-0,03		6,35		85.	45.	46,54	46,37	-0,17
April	1.	0.	3.32,6				0.	42.	57,43	57,36	-0,07		6,30		85.	22.	37,61	37,16	-0,45
	7.	0.	1.46,4				1.	4.	50,25	50,10	-0,15								
	8.	0.	1.29,3				1.	8.	29,70	29,60	-0,10								
	12.	0.	0.23,8				1.	23.	10,26	10,13	-0,13		5,85		81.	14.	33,19	33,34	+0,15
	13.	0.	0. 8,1				1.	26.	51,03	50,96	-0,07		5,81		80.	52.	47,19	45,84	-1,35
	17.	23. 58.54,5					1.	45.	19,99	20,08	+0,09		5,60		79.	6.	9,38	12,43	+3,05
	19.	23. 58.27,9		I.	1. 5,21		1.	52.	46,39	46,31	-0,08	N.	5,49	15. 55,69	78.	24.	48,54	48,62	+0,08
	22.	23. 57.50,8					2.	3.	58,86	58,82	-0,04								
	26.	23. 57. 8,0					2.	19.	2,15	2,09	-0,06	S.	5,28	15. 53,89	76.	6.	12,44	12,50	+0,06
	27.	23. 56.58,5					2.	22.	49,21	49,18	-0,03		5,21		75.	47.	14,70	16,40	+1,70
May	1.	23. 56.26,2		II.	1. 6,07		2.	38.	3,09	2,99	-0,10		5,06		74.	33.	54,16	54,08	-0,08
	4.	23. 56. 8,0					2.	49.	34,43	34,23	-0,20		4,95		73.	41.	29,40	30,37	+0,97
	10.	23. 55.46,5					3.	12.	52,23	52,21	-0,02		4,75		72.	4.	5,11	7,04	+1,93
	11.	23. 55.45,1		II.	1. 6,88		3.	16.	47,36	47,21	-0,15	N.	4,68	15. 50,49	71.	48.	52,66	54,54	+1,88
	15.	23. 55.44,4					3.	32.	32,96	32,76	-0,20		4,60		70.	51.	9,62	10,82	+1,20
	16.	23. 55.45,5					3.	36.	30,62	30,52	-0,10		4,57		70.	37.	30,44	32,91	+2,47
	17.	23. 55.47,7					3.	40.	29,33	28,84	(-0,49)		4,54		70.	24.	11,62	14,80	+3,18
	18.	23. 55.49,7					3.	44.	27,90	27,69	-0,21	N.	4,48	15. 49,19	70.	11.	10,43	16,70	(+6,27)
	19.	23. 55.53,6		II.	1. 7,53		3.	48.	28,41	27,08	-1,33								
	20.	23. 55.56,0					3.	52.	27,36	27,00	-0,36		4,46		69.	46.	20,58	21,39	+0,81
	22.	23. 56. 4,3		II.	1. 7,75		4.	0.	28,75	28,46	-0,29								
	23.	23. 56. 9,1					4.	4.	30,12	29,96	-0,16		4,38		69.	11.	34,54	34,37	-0,17
	24.	23. 56.14,8					4.	8.	32,38	32,00	-0,38		4,36		69.	0.	40,31	41,07	+0,76
	25.	23. 56.20,4					4.	12.	34,63	34,54	-0,09		4,34		68.	50.	8,13	9,46	+1,33
	26.	23. 56.27,0					4.	16.	37,80	37,58	-0,22		4,31		68.	39.	59,14	59,65	+0,51
June	7.	23. 58.18,8					5.	5.	48,55	48,13	-0,42		4,11		67.	7.	32,17	33,58	+1,41
	10.	23. 58.53,9					5.	18.	13,43	13,23	-0,20		4,08		66.	53.	18,62	19,06	+0,44
	13.	23. 59.31,0		I.	1. 8,84		5.	30.	40,25	40,05	-0,20								
	14.	23. 59.43,4					5.	34.	49,28	49,27	-0,01		4,05		66.	40.	1,59	2,14	+0,55
	15.	23. 59.56,3					5.	38.	58,83	58,57	-0,26		4,04		66.	37.	42,97	44,63	+1,66
	17.	0. 0. 9,3					5.	43.	8,37	7,95	-0,42		4,04		66.	35.	51,08	51,82	+0,74
	20.	0. 0.47,5					5.	55.	36,35	36,34	-0,01		4,03		66.	32.	42,69	42,01	-0,68
	24.	0. 1.38,9					6.	12.	14,12	14,05	-0,07		4,03		66.	34.	17,15	15,88	-1,27
	29.	0. 2.41,1					6.	32.	59,30	59,15	-0,15		4,06		66.	45.	29,26	28,74	-0,52

Jan. 17. Each Limb at only two wires.

April 7. The transit of 2 L at only two wires.

May 18. The R.A. of 2 L was very discordant.

May 20. The observed R.A. is 1<sup>s</sup> too great by error in counting.



Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.		
d.	h.	m.	s.		m.	s.	h.	m.	s.	s.	s.	"	"	°	'	"	"	"
July	1.	0.	3. 4,8	I.	1.	8,70	6. 41. 16,13			16,03	- 0,10	S.	4,07	15. 45,00	66. 52. 50,18	49,43	- 0,75	
	2.	0.	3. 16,1	I.	1.	8,66	6. 45. 24,05			24,12	+ 0,07		4,11		66. 57. 6,01	6,13	+ 0,12	
	4.	0.	3. 38,5				6. 53. 39,66			39,51	- 0,15		4,10		67. 6. 52,48	52,01	- 0,47	
	6.	0.	3. 59,4	I.	1.	8,48	7. 1. 53,74			53,65	- 0,09		4,13		67. 18. 14,52	13,60	- 0,92	
	7.	0.	4. 9,3				7. 6. 0,24			0,20	- 0,04		4,14		67. 24. 29,14	29,99	+ 0,85	
	20.	0.	5. 37,7	II.	1.	7,58	7. 58. 44,12			43,87	- 0,25	4,39	69. 20. 32,07	34,22	+ 2,15			
	23.	0.	5. 45,3				8. 10. 41,42			41,28	- 0,14	4,46	69. 55. 59,16	59,00	- 0,16			
	25.	0.	5. 47,6				8. 18. 36,84			36,72	- 0,12	4,52	70. 21. 15,25	16,39	+ 1,14			
	26.	0.	5. 47,7				8. 22. 33,43			33,59	+ 0,16	4,55	70. 34. 24,22	24,69	+ 0,47			
	29.	0.	5. 45,3			1.	6,83	8. 34. 20,73			20,71	- 0,02	S.	4,65	15. 46,69	71. 15. 43,31	44,57	+ 1,26
30.	0.	5. 43,2			8. 38. 15,18			15,25	+ 0,07	4,66	71. 30. 9,22	8,67		- 0,55				
Aug.	4.	0.	5. 24,2			8. 57. 38,86			39,10	+ 0,24	4,82	72. 46. 36,19		37,74		+ 1,55		
	5.	0.	5. 18,7			9. 1. 29,98			30,07	+ 0,09	4,85	73. 2. 50,19		47,24		- 2,95		
	6.	0.	5. 12,6			9. 5. 20,38			20,45	+ 0,07	4,89	73. 19. 12,44		13,24		+ 0,80		
	8.	0.	4. 58,4	I.	1.	5,97	9. 12. 59,26			59,40	+ 0,14	4,95	73. 52. 54,13	53,33	- 0,80			
	9.	0.	4. 50,5				9. 16. 47,92			47,98	+ 0,06	4,99	74. 10. 7,56	6,92	- 0,64			
	10.	0.	4. 42,1				9. 20. 36,00			35,95	- 0,05	5,03	74. 27. 35,88	35,62	- 0,26			
	11.	0.	4. 32,9				9. 24. 23,32			23,34	+ 0,02	5,06	74. 45. 20,90	19,32	- 1,58			
	13.	0.	4. 12,8				9. 31. 56,32			56,37	+ 0,05	5,13	75. 21. 28,70	29,91	+ 1,21			
	17.	0.	3. 26,1			9. 46. 55,69			55,74	+ 0,05	5,28	76. 36. 36,60	35,89	- 0,71				
	20.	0.	2. 45,7	S.							S.	5,43	15. 50,19	77. 35. 8,13	9,69	+ 1,56		
22.	0.	2. 16,2				10. 5. 28,35			28,48	+ 0,13								
24.	0.	1. 45,3				10. 12. 50,52			50,42	- 0,10		5,56		78. 55. 58,13	58,67	+ 0,54		
25.	0.	1. 29,2				10. 16. 30,92			30,77	- 0,15		5,59		79. 16. 39,87	38,17	- 1,70		
26.	0.	1. 12,6				10. 20. 10,81			10,74	- 0,07		5,63		79. 37. 28,03	27,87	- 0,16		
Sept.	21.	23. 52. 15,0	II.				11. 57. 38,70			38,55		- 0,15		6,70	89. 44. 42,08	39,53	- 2,55	
	22.	23. 51. 54,2					12. 1. 14,33			14,22		- 0,11		6,75	90. 8. 5,08	3,23	- 1,85	
	23.	23. 51. 33,6					12. 4. 50,26			50,03		- 0,23		6,76	90. 31. 27,90	27,73	- 0,17	
25.	23. 50. 52,5					12. 12. 2,20			2,19	- 0,01		6,86		91. 18. 21,68	17,83	- 3,85		
29.	23. 49. 33,5	1.			4,26	12. 26. 29,15			29,15	0,00		7,00		92. 51. 52,74	52,43	- 0,31		
Oct.	2.	23. 48. 37,2				12. 37. 22,35			22,26	- 0,09	7,11	94. 1. 47,14	47,13	- 0,01				
	11.	23. 46. 7,8				13. 10. 21,52			21,34	- 0,18	7,40	97. 28. 18,09	16,64	- 1,45				
	12.	23. 45. 53,4				13. 14. 3,67			3,45	- 0,22	7,43	97. 50. 47,58	46,95	- 0,63				
	13.	23. 45. 39,5				13. 17. 46,29			46,09	- 0,20	7,46	98. 13. 10,25	10,55	+ 0,30				
	14.	23. 45. 26,1				13. 21. 29,36			29,26	- 0,10	7,49	98. 35. 29,09	27,35	- 1,74				
	17.	23. 44. 49,4			13. 32. 42,24			42,20	- 0,04	7,58	99. 41. 34,59	31,76	- 2,83					
	19.	23. 44. 28,2			13. 40. 14,07			13,90	- 0,17	7,63	100. 24. 54,91	53,36	- 1,55					
	21.	23. 44. 9,3			13. 47. 48,30			48,22	- 0,08	7,68	101. 7. 38,26	38,07	- 0,19					
	23.	23. 43. 53,6			13. 55. 25,63			25,32	- 0,31	7,73	101. 49. 44,43	43,17	- 1,26					
	25.	23. 43. 40,1	I.	1.	6,24	14. 3. 5,20			5,37	+ 0,17								
30.	23. 43. 21,3				14. 22. 29,12			28,83	- 0,29	7,90	104. 11. 4,09	3,09	- 1,00					
31.	23. 43. 19,8				14. 26. 24,13			23,88	- 0,25	7,92	104. 30. 25,18	23,40	- 1,78					
Nov.	1.	23. 43. 19,0				14. 30. 19,86			19,74	- 0,12	7,94	104. 49. 30,73	29,70	- 1,03				
	7.	23. 43. 32,1				14. 54. 12,36			11,98	- 0,38	8,06	106. 38. 52,34	48,23	- 4,11				
	11.	23. 43. 57,1			15. 10. 23,66			23,33	- 0,33	8,13	107. 46. 6,68	5,85	- 0,83					
15.	23. 44. 35,2			15. 26. 48,14			48,07	- 0,07	8,18	108. 48. 28,15	26,27	- 1,88						
16.	23. 44. 47,1			15. 30. 56,62			56,37	- 0,25	8,20	109. 3. 14,21	12,17	- 2,04						
20.	23. 45. 42,4			15. 47. 38,27			37,93	- 0,34	8,25	109. 58. 49,24	47,79	- 1,45						
Dec.	1.	23. 49. 18,5			16. 34. 37,13			37,05	- 0,08	8,35	112. 0. 33,49	30,56	- 2,93					
	4.	23. 50. 31,8			16. 47. 40,25			40,05	- 0,20	8,38	112. 25. 6,22	4,28	- 1,94					
	8.	23. 52. 16,6			17. 5. 11,57			11,31	- 0,26	8,40	112. 51. 42,73	40,11	- 2,62					
	13.	23. 54. 36,8			17. 27. 15,01			14,49	(- 0,52)	8,41	113. 14. 46,64	43,75	- 2,89					
	15.	23. 55. 34,4			17. 36. 5,83			5,87	+ 0,04	8,42	113. 20. 48,37	43,26	- 5,11					
	22.	23. 59. 3,0			18. 7. 10,90			10,89	- 0,01	8,43	113. 26. 57,31	55,72	- 1,59					
	27.	0. 1. 2,6	I.	1.	11,15	18. 24. 57,10			57,20	+ 0,10	8,42	113. 20. 6,49	6,75	+ 0,26				
	28.	0. 1. 32,6				18. 29. 23,76			23,48	- 0,28	8,43	113. 17. 16,20	13,85	- 2,35				
	29.	0. 2. 1,9				18. 33. 49,69			49,58	- 0,11	8,42	113. 13. 51,08	52,96	+ 1,88				
	31.	0. 3. 0,2				18. 42. 41,19			41,05	- 0,14	8,41	113. 5. 45,80	47,48	+ 1,68				

July 26, 29, and Aug. 8. The observed R.A. of centre is inferred from the transits of the Limbs by applying the semidiameter, and giving to the two results weights proportional to the number of wires.

Dec. 14. The R.A. depends on only one star, and the clock-rate was uncertain.

On Jan. 11, Jan. 27, Feb. 5, Feb. 11, May 27, Oct. 12, Oct. 14, Oct. 15, and Dec. 5, there were no accompanying transits of clock-stars.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EUTERPE.

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Nov. 14. 11. 37. 3,1	7	3. 13. 19,89	19,99	+ 0,10				
16. 11. 27. 10,1	7	3. 11. 18,40	18,52	+ 0,12	5,04	74. 20. 30,06	30,02	- 0,04
17. 11. 22. 14,0	7	3. 10. 18,06	18,17	+ 0,11	5,04	74. 23. 29,67	29,91	+ 0,24
18. 11. 17. 18,3	7	3. 9. 18,16	18,22	+ 0,06	5,05	74. 26. 27,98	27,40	- 0,58
19. 11. 12. 23,0	7	3. 8. 18,57	18,76	+ 0,19	5,05	74. 29. 21,90	21,98	+ 0,08
21. 11. 2. 34,8	7	3. 6. 21,88	21,72	- 0,16	5,05	74. 35. 1,01	1,34	+ 0,33
Dec. 2. 10. 9. 54,8	10	2. 56. 55,33	55,27	- 0,06	4,97	75. 0. 1,66	59,49	- 2,17
9. 9. 38. 6,3	10	2. 52. 37,55	37,58	+ 0,03	4,73	75. 8. 27,73	5,56	(- 22,17)
12. 9. 24. 58,9	11	2. 51. 17,69	17,77	+ 0,08	4,77	75. 9. 15,31	17,03	+ 1,72
28. 8. 20. 37,3					4,30	74. 50. 59,32	59,00	- 0,32
29. 8. 16. 55,0	3	2. 50. 4,03	4,19	+ 0,16				
30. 8. 13. 15,1	4	2. 50. 20,10	20,14	+ 0,04	4,23	74. 45. 47,92	49,08	+ 1,16
31. 8. 9. 37,0	3	2. 50. 37,95	38,31	+ 0,36				

Nov. 16 and 19. The N.P.D. is the mean from two bisections.

Dec. 9. It appears probable from the comparison with the Tabular N.P.D. that the Planet was bisected with the fixed wire, in which case the N.P.D. should be diminished by 20",87.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF METIS.

Oct. 20. 11. 1. 20,8	7	0. 58. 57,88	57,60	- 0,28	5,71	91. 59. 10,07	13,09	+ 3,02
25. 10. 37. 17,2	7	0. 54. 33,16	32,87	- 0,29	5,66	92. 8. 28,03	30,94	+ 2,91
28. 10. 23. 3,6	7	0. 52. 6,87	6,60	- 0,27	5,61	92. 11. 53,87	46,98	(- 6,89)
Nov. 1. 10. 4. 23,8	5	0. 49. 10,23	10,03	- 0,20	5,54	92. 13. 13,04	14,87	+ 1,83
8. 9. 32. 40,4	7	0. 44. 57,51	61,31	(+ 3,80)	5,36	92. 7. 28,34	31,36	+ 3,02
9. 9. 28. 20,3					5,34	92. 5. 50,66	51,05	+ 0,39
10. 9. 23. 57,4	4	0. 44. 6,13	5,90	- 0,23	5,31	92. 3. 51,93	57,15	+ 5,22
17. 8. 54. 11,0					5,09	91. 44. 41,87	46,88	+ 5,01
18. 8. 50. 3,3					5,06	91. 41. 11,96	13,49	+ 1,53
19. 8. 45. 57,5	7	0. 41. 29,06	28,64	- 0,42	5,02	91. 37. 25,86	28,22	+ 2,36
21. 8. 37. 51,6	7	0. 41. 14,88	14,54	- 0,34	4,96	91. 29. 21,13	22,62	+ 1,49
Dec. 12. 7. 20. 16,5	11	0. 46. 14,78	14,50	- 0,28	4,22	89. 22. 5,68	9,06	+ 3,38
23. 6. 44. 39,4	9	0. 53. 53,94	45,63	(- 8,31)	3,84	87. 50. 32,69	35,92	+ 3,23

Oct. 25. The magnitude of the Planet was estimated by the transit observer to be 8 $\frac{3}{4}$ .

Oct. 28. The object observed with the Circle may not be the Planet: the recorded N.P.D. was increased 5' conjecturally.

Nov. 8. The observed R.A. does not agree with a note of time taken by the circle observer, and probably applies to a different object.

Nov. 18. The N.P.D. is the mean from two bisections.

Nov. 21. The N.P.D. is the mean from three bisections.

Dec. 23. The object taken with the Circle, which preceded that taken with the Transit, was the Planet.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THETIS.

Sept. 24. 10. 53. 31,3	11	23. 8. 36,74	33,35	- 3,39	5,25	102. 40. 41,99	77,94	+ 35,95
Nov. 1. 8. 12. 36,2	4	22. 57. 4,20	1,61	- 2,59	4,24	103. 27. 15,99	29,38	+ 13,39

The object observed on Sept. 24 may not be the Planet: the recorded N.P.D. was increased 1' conjecturally.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF ASTRÆA.

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Oct. 20. 12. 21. 2,8	5	2. 18. 53,00	52,74	- 0,26	3,85	84. 40. 1,63	3,14	+ 1,51
25. 11. 56. 57,6	11	2. 14. 26,57	26,40	- 0,17	3,92	85. 9. 10,38	10,78	+ 0,40
28. 11. 42. 26,9	3	2. 11. 43,18	43,00	- 0,18	3,94	85. 26. 0,43	59,43	- 1,00
Nov. 8. 10. 49. 24,4	11	2. 1. 54,05	54,25	+ 0,20				

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF IRENE.

Nov. 1. 13. 51. 29,9	11	4. 36. 53,57	68,07	+ 14,50	2,75	74. 17. 4,55	9,43	- 55,12
2. 13. 46. 53,3	4	4. 36. 12,79	27,30	+ 14,51				
3. 13. 42. 15,3	11	4. 35. 30,56	45,10	+ 14,54	2,78	74. 17. 37,36	38,54	- 58,82
8. 13. 18. 44,3	4	4. 31. 38,54	53,30	+ 14,76	2,84	74. 18. 45,42	45,52	- 59,90
17. 12. 35. 11,4					2,91	74. 20. 3,70	1,87	- 61,83
18. 12. 30. 16,8	2	4. 22. 28,61	43,65	+ 15,04	2,92	74. 20. 9,74	5,12	- 64,62
19. 12. 25. 20,9	7	4. 21. 28,47	43,87	+ 15,40	2,93	74. 20. 11,54	6,93	- 64,61
Dec. 2. 11. 20. 46,1	7	4. 7. 58,28	13,34	+ 15,06				
27. 9. 20. 49,8					2,78	73. 48. 15,89	1,86	- 74,03
28. 9. 16. 18,7	4	3. 45. 40,92	53,92	+ 13,00	2,77	73. 46. 20,56	54,95	- 85,61
29. 9. 11. 49,1	4	3. 45. 7,16	20,07	+ 12,91	2,75	73. 43. 58,94	43,17	- 75,77
30. 9. 7. 21,2	6	3. 44. 35,14	47,88	+ 12,74	2,74	73. 41. 37,02	26,14	- 70,88
31. 9. 2. 55,0	4	3. 44. 4,72	17,38	+ 12,65	2,73	73. 39. 8,45	4,86	- 63,59

Dec. 31. The Transit and Circle observations were taken by the same observer: the latter was probably taken hurriedly.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF CALLIOPE.

Jan. 5. 9. 25. 31,6	5	4. 27. 25,02	24,26	- 0,76	2,01	62. 35. 1,31	9,21	+ 7,90
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The Circle and the Transit observations were both uncertain, being taken hurriedly by the same observer.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF HYGEIA.

Jan. 7. 8. 47. 32,5	4	3. 57. 12,79	45,16	- 27,63				
8. 8. 43. 18,5	5	3. 56. 54,74	26,82	- 27,92	1,54	66. 48. 16,91	71,72	+ 54,81

Jan. 7. The Planet was not seen with the Circle Telescope.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF NEPTUNE.

Greenwich Mean Solar Time of Transit.				Number of wires.	R. A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				°	'	"		
Aug.	11	13	36.35,9							0,25	97	36	13,34	10,05	-3,29
	12	13	32.34,6	7	22	58	34,38	34,48	+0,10	0,25	97	36	46,15	45,40	-0,75
	27	12	32.9,1							0,26	97	46	2,33	1,13	-1,20
Sept.	21	10	51.20,9	7	22	54	36,31	36,21	-0,10						
	23	10	43.17,4	5	22	54	24,58	24,66	+0,08	0,26	98	2	57,90	53,59	-4,31
	24	10	39.15,8	7	22	54	18,84	18,95	+0,11	0,26	98	3	31,40	28,56	-2,84
Oct.	1	10	11.5,9	7	22	53	40,24	40,37	+0,13	0,26	98	7	24,88	23,29	-1,59
	3	10	3.3,6	7	22	53	29,75	29,86	+0,11	0,26	98	8	29,28	26,99	-2,29
	5	9	55.1,4	7	22	53	19,33	19,60	+0,27	0,26	98	9	30,69	28,78	-1,91
	18	9	2.55,8	7	22	52	20,29	20,40	+0,11	0,25	98	15	24,28	21,28	-3,00
	20	8	54.56,1	7	22	52	12,41	12,60	+0,19	0,25	98	16	10,59	6,94	-3,65
	22	8	46.56,9	6	22	54	5,01	5,18	+0,17	0,25	98	16	53,09	50,32	-2,77
	25	8	34.58,9	7	22	51	54,69	54,79	+0,10	0,25	98	17	53,08	50,51	-2,57
	31	8	11.5,6	7	22	51	36,84	36,84	0,00	0,25	98	19	36,95	32,99	-3,96
Nov.	1	8	7.7,0	7	22	51	34,08	34,23	+0,15	0,25	98	19	52,12	47,65	-4,47
	3	7	59.10,2	7	22	51	29,15	29,36	+0,21	0,25	98	20	19,21	14,77	-4,44
	8	7	39.20,6	7	22	51	19,03	19,27	+0,24	0,25	98	21	11,44	9,77	-1,67
	9	7	35.23,4	7	22	51	17,73	17,60	-0,13	0,25	98	21	22,19	18,52	-3,67
	10	7	31.25,6	7	22	51	15,87	16,06	+0,19	0,25	98	21	30,10	26,57	-3,53
	11	7	27.28,5	7	22	51	14,64	14,63	-0,01	0,25	98	21	35,17	33,92	-1,25
	14	7	15.37,2	7	22	51	11,13	11,11	-0,02	0,25	98	21	52,26	51,05	-1,21
	17	7	3.47,1	6	22	51	8,76	8,70	-0,06	0,25	98	22	2,52	1,24	-1,28
	18	6	59.50,5	7	22	51	8,01	8,14	+0,13	0,25	98	22	5,63	3,10	-2,53
	19	6	55.54,2	7	22	51	7,66	7,71	+0,05	0,25	98	22	8,10	4,17	-3,93
	21	6	48.2,2	7	22	51	7,46	7,24	-0,22	0,25	98	22	6,76	3,92	-2,84
	22	6	44.6,1	7	22	51	7,30	7,19	-0,11	0,25	98	22	5,27	2,58	-2,69
Dec.	1	6	8.48,2	6	22	51	12,58	12,58	0,00	0,25	98	21	19,76	15,69	-4,07
	2	6	4.53,5	7	22	51	13,77	13,84	+0,07	0,25	98	21	11,01	6,56	-4,45
	12	5	25.53,9	3	22	51	33,38	33,35	-0,03	0,25	98	18	53,73	52,21	-1,52
	14	5	18.7,6	7	22	51	38,91	38,77	-0,14	0,25	98	18	17,38	16,15	-1,23
	23	4	43.14,4							0,25	98	15	0,14	56,75	-3,39



**DETERMINATION OF THE POSITION OF THE ECLIPTIC, AND OF THE MEAN ERROR OF THE ASSUMED RIGHT ASCENSIONS OF THE FUNDAMENTAL STARS, FROM THE TRANSIT AND CIRCLE OBSERVATIONS OF THE SUN IN THE YEAR 1853.**

The total number of Circle Observations of the Sun is 110 inclusive of 11 observations of single Limbs. If that of May 19 be excluded, as being more discordant than any of the others, the remainder may be divided into four groups containing respectively 26, 26, 25½ and 26½ observations, an observation of a single Limb being reckoned half an observation. Each of these groups is subdivided into three groups, as exhibited in the sub-joined Table, which also contains the limiting days and the mean day of each group, the mean value ( $\alpha$ ) of the Tabular Errors in North Polar Distance, derived from pages 227 and 228, (half-weight being given to the results from observations of single Limbs,) and the Sun's Longitude ( $\lambda$ ) and North Polar Distance ( $\Delta$ ) at the mean noon of the mean day.

Limiting Days of Observation of each group.	Mean Day.	Mean of the Tabular Errors in N.P.D.	Number of Observations.	Sun's Longitude at mean Noon of mean Day.	Sun's N.P.D. at mean Noon of mean Day.
		"		° ' "	° ' "
Jan. 5.....Jan. 31 Feb. 2.....Feb. 28 Mar. 9.....Apr. 1	Jan. 16 Feb. 16 Mar. 22	+0,64 -0,04 -0,39	9 8½ 8½	296.21.41 327.47.49 1.48.1	110.53.50 102.14.54 89.17.0
Apr. 12.....May 12 May 16.....June 8 June 11.....July 2	Apr. 27 May 24 June 22	+0,87 +1,28 +0,03	8½ 9 8½	37.6.31 63.10.7 90.53.55	76.6.10 69.11.33 66.32.39
July 4.....July 30 Aug. 4.....Aug. 13 Aug. 17.....Sept. 30	July 19 Aug. 8 Sept. 8	+0,37 -0,33 -1,10	8½ 8 9	116.38.46 135.46.46 165.42.10	69.9.25 73.52.50 84.21.29
Oct. 3.....Oct. 24 Oct. 31.....Dec. 2 Dec. 5.....Dec. 31	Oct. 16 Nov. 12 Dec. 20	-1,04 -1,89 -1,35	9 9 8½	203.2.27 230.3.26 268.35.28	98.57.50 107.46.17 113.27.6

*Formula of Calculation.*

$$\alpha + m \cos \lambda \operatorname{cosec} \Delta + n \sin \lambda \operatorname{cosec} \Delta + p = 0.$$

The following equations were formed according to this formula by means of the data in the above Table, each equation being multiplied by the respective number of observations.

First Quarter	{	Jan. 16..... + 5,79 + $m \times 4,2777 - n \times 8,6319 + 9,0p = 0.$
		Feb. 16..... - 0,33 + $m \times 7,3599 - n \times 4,6353 + 8,5p = 0.$
		Mar. 22..... - 3,35 + $m \times 8,4965 + n \times 0,2671 + 8,5p = 0.$
Second Quarter	{	Apr. 27..... + 7,38 + $m \times 6,9831 + n \times 5,2829 + 8,5p = 0.$
		May 24..... + 11,50 + $m \times 4,3457 + n \times 8,5914 + 9,0p = 0.$
		June 22..... + 0,23 - $m \times 0,1453 + n \times 9,2645 + 8,5p = 0.$
Third Quarter	{	July 19..... + 3,14 - $m \times 4,0790 + n \times 8,1292 + 8,5p = 0.$
		Aug. 8..... - 2,67 - $m \times 5,9679 + n \times 5,8077 + 8,0p = 0.$
		Sept. 8..... - 9,89 - $m \times 8,7637 + n \times 2,2334 + 9,0p = 0.$
Fourth Quarter	{	Oct. 16..... - 9,36 - $m \times 8,3844 - n \times 3,5660 + 9,0p = 0.$
		Nov. 12..... - 17,05 - $m \times 6,0677 - n \times 7,2459 + 9,0p = 0.$
		Dec. 20..... - 11,50 - $m \times 0,2278 - n \times 9,2626 + 8,5p = 0.$

The equations for each Quarter being added together, and the sums for the third and fourth Quarters being multiplied by factors to make the coefficient of  $p$  exactly 26, the resulting equations give the following, by adding and subtracting as here indicated:

$$\text{First Quarter} + \text{Second} + \text{Third} + \text{Fourth} \dots - 25'',57 - m \times 2,2647 + n \times 6,9304 + 104p = 0.$$

$$\text{First Quarter} + \text{Second} - \text{Third} - \text{Fourth} \dots + 68'',01 + m \times 64,8999 + n \times 13,3470 = 0.$$

$$\text{First Quarter} - \text{Second} - \text{Third} + \text{Fourth} \dots - 44'',59 + m \times 13,7271 - n \times 72,3220 = 0.$$

The solution of these equations gives,

$$m = -0'',887,$$

$$n = -0'',785,$$

$$p = +0'',279.$$



Let  $\delta\lambda$  = the mean excess for the year of the Tabular Longitude of the Sun above the true Longitude.

$\delta R$  = the mean excess for the year of the Tabular R.A. of the Sun above the true R.A.

$\delta\Delta$  = the mean excess for the year of the Tabular N.P.D. of the Sun above the true N.P.D.

$\delta I$  = the excess of the Obliquity ( $I$ ) assumed in the Tables above the true Obliquity.

$A = -0^s,117$ , which is the mean of the 118 apparent excesses of the Tabular R.A. in pages 227 and 228, (those of Jan. 17, May 18, and Dec. 14 being excluded), an observation of a single Limb being reckoned of half-weight.

$D = -0'',251$ , which is the mean of the 110 apparent excesses of Tabular N.P.D. used in forming the above equations, an observation of a single Limb being reckoned of half-weight.

$q$  = the mean excess of the assumed R.A. of the fundamental stars above the true R.A.

$p$  = the mean excess within the Tropics of the N.P.D. determined by the Circle observations and calculations of 1853 above the true N.P.D.

Then,  $\delta\lambda = m \operatorname{cosec} I = -0'',887 \times \operatorname{cosec} 23^\circ.27',5 = -2'',227$ .

$$\delta R = \Sigma. \frac{\cos I \operatorname{cosec}^2 \Delta}{2\pi} = \frac{\delta\lambda}{15} \text{ nearly} = -0^s,148.$$

$$\delta\Delta = (\text{Tabular N.P.D.} - \text{Observed N.P.D.}) + (\text{Observed N.P.D.} - \text{True N.P.D.})$$

$$= D + p = -0'',251 + 0'',279 = +0'',028.$$

$$\delta I = n \sec I = -0'',785 \times \sec 23^\circ.27',5 = -0'',856.$$

$$q = (\text{Tabular R.A.} - \text{True R.A.}) - (\text{Tabular R.A.} - \text{Observed R.A.})$$

$$= \delta R - A = -0^s,148 + 0^s,117 = -0^s,031.$$

Hence the assumed R.A. of the fundamental stars are too small by the mean quantity  $0^s,031$ .







OCCULTATIONS  
OF  
FIXED STARS BY THE MOON,  
WITH  
THE EQUATIONS GIVEN BY THE CALCULATION  
OF THE OCCULTATIONS.

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1853.



COMPARISONS OF CHRONOMETERS WITH THE TRANSIT CLOCK, USED IN THE  
CALCULATION OF THE FOLLOWING OCCULTATIONS.

\* \* The letter *H* is an abbreviation for Hardy, the Transit Clock; and *U* and *X* are Sidereal Chronometers each beating half-seconds.

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.	Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.
1853.		<i>h. m. s.</i>		<i>h. m. s.</i>	1853.		<i>h. m. s.</i>		<i>h. m. s.</i>
Jan. 14	H.	0.44.18,0	X.	0.46.46,8	Apr. 20	H.	10.4.15,0	X.	10.7.33,9
...	H.	0.45.5,0	X.	0.47.33,7	...	H.	10.2.37,2	U.	10.4.17,0
...	H.	0.46.41,1	U.	0.45.4,0	May 20	H.	12.28.21,0	X.	12.31.49,3
...	H.	2.2.44,0	X.	2.5.12,6	...	H.	12.26.43,0	U.	12.23.53,6
...	H.	1.59.7,2	U.	1.57.29,5	...	H.	13.29.40,0	X.	13.33.8,2
...	H.	3.12.56,0	X.	3.15.25,0	...	H.	13.30.17,0	X.	13.33.45,3
...	H.	3.10.12,3	U.	3.8.34,5	...	H.	13.34.49,7	U.	13.32.0,0
Feb. 17	H.	8.6.26,0	X.	8.6.17,0	Sept. 20	H.	1.55.31,0	X.	1.59.41,4
...	H.	9.4.59,0	X.	9.4.50,0	...	H.	1.56.3,0	X.	2.0.13,3
Mar. 24	H.	9.2.9,0	X.	9.4.9,5	Oct. 7	H.	18.58.1,0	X.	19.2.29,5
26	H.	11.6.8,0	X.	11.8.14,9	...	H.	19.42.14,0	X.	19.46.42,6
29	H.	9.9.34,0	X.	9.11.51,3	14	H.	23.31.39,0	X.	23.36.42,7
26	H.	12.36.25,0	U.	12.25.57,0	...	H.	23.32.28,0	X.	23.37.31,6
Apr. 20	H.	8.59.8,0	X.	9.2.26,8	Dec. 9	H.	2.29.42,0	U.	2.28.24,9

The comparisons on March 24 and March 29 are used for making allowance for the rate of X on March 26.



Day of Observation 1853.	Phænomenon.	Moon's Limb.	Chronom. or Clock.	Instrument.	Time by Chronometer.	Sidereal Time.	Greenwich Mean Solar Time.	Observer.
					h. m. s.		h. m. s.	
Jan. 14	(a) Reappearance of 30 Piscium	Bright	X.	Northumb. Equat.	0.42.22,5	0.40.53,08	5.4.13,53	B.
...	(b) Disappearance of 33 Piscium	Dark	U.	5-feet Equatorial	0.38.29,3	0.41.5,73		T.
...	(c) Reappearance of 33 Piscium	Bright	X.	Northumb. Equat.	1.56.46,0	1.55.16,81	6.18.25,07	B.
Feb. 17	(d) Disappearance of $\alpha$ Tauri	Dark	U.	5-feet Equatorial	1.52.40,0	1.55.17,11	6.18.25,37	T.
...	(e) Reappearance of $\alpha$ Tauri	Bright	X.	Northumb. Equat.	3.8.57,8	3.7.28,29	7.30.24,71	B.
Mar. 26	(f) Disappearance of 95 Virginis	Dark	U.	5-feet Equatorial	3.4.53,0	3.7.30,29		T.
...	(g) Reappearance of 95 Virginis	Bright	X.	Northumb. Equat.	8.0.53,9	8.1.57,15	10.10.24,40	B.
April 20	(h) Disappearance of $\nu$ Virginis	Dark	X.	Northumb. Equat.	9.0.11,0	9.1.14,30	11.9.31,84	B.
...	(i) Reappearance of $\nu$ Virginis	Bright	X.	Northumb. Equat.	11.20.21,0	11.19.6,88	11.1.33,25	B.
May 20	(k) Disappearance of 95 Virginis	Dark	U.	Northumb. Equat.	12.13.22,3	12.24.43,19	12.6.58,82	T.
...	(l) Reappearance of 95 Virginis	Bright	X.	Northumb. Equat.	8.52.30,0	8.50.45,39	6.55.18,39	B.
Sept. 20	(m) Disappearance of 38 Arietis	Dark	U.	5-feet Equatorial	10.2.24,8	10.0.40,17	8.5.1,71	B.
Oct. 7	(n) Disappearance of $\theta$ Ophiuchi	Bright	X.	Northumb. Equat.	10.0.45,0	10.0.39,47	8.5.1,01	T.
...	(o) Reappearance of $\theta$ Ophiuchi	Dark	X.	Northumb. Equat.	12.25.56,1	12.23.53,31	8.29.54,11	B.
...	(p) Disappearance of 33 Piscium	Bright	U.	5-feet Equatorial	12.19.39,4	12.23.54,31		T.
Dec. 9	(q) Disappearance of 33 Ceti	Dark	X.	Northumb. Equat.	13.30.42,3	13.28.39,63	9.34.29,81	B.
			U.	5-feet Equatorial	13.24.30,0	13.28.45,28		T.
			H.	46-inch Dollond	1.53.10,6	1.50.30,59	13.50.42,27	B.
			X.	46-inch Dollond	18.56.52,5	18.52.22,14	5.46.51,90	B.
			X.	46-inch Dollond	19.44.17,3	19.40.46,90	6.35.8,73	B.
			X.	45-inch Dollond	23.31.38,0	23.27.45,65	9.53.58,95	B.
			U.	Northumb. Equat.	2.21.19,4	2.24.27,18	9.10.0,56	B.
			H.	46-inch Dollond	2.22.38,0	2.24.28,68		T.

(a) 'Very good: thin cloud over the Moon.' (B.) 'I was looking a little above the place, and the star was faint from cloud: a very low power used.' (T.) The time appears to be considerably too late. (b) 'Very exact: the disappearance was coincident with the beat of the chronometer.' 'Very good.' (T.) Both observers noticed that the whole of the dark Limb was traceable. (c) 'True, I think, to a tenth of a second.' (B.) 'The observation seemed good, but the star was barely seen, the sky being cloudy.' (T.) (d) 'Beautifully exact: the sky very clear and circumstances favourable.' (B.) (e) 'Bad: separated from the Limb.' (B.) The calculation of this observation is not added, the time being found to be considerably too late. (f) 'The star very faint and the Moon's Limb waving, but the observation not uncertain.' (B.) (g) 'Quite exact.' (T.) (h) The observer was doubtful whether the star disappeared behind cloud or the Moon's Limb. T. saw the star frequently, but could not tell when the immersion took place. (i) 'Very good: I saw the star immediately on its reappearance. The sky rather misty.' (B.) 'Good, I believe: a thin cloud over the sky, but the Moon was beautifully defined, and the star was seen at the instant of reappearance.' (T.) (k) Both observations were considered good, the circumstances being favourable. One of them, probably T's, appears to be 1<sup>s</sup> wrong by miscounting. (l) B. considered his observation very exact. T. was not looking at the right place, and the star, which was faint, was partially hid by one of the horizontal wires. (m) 'Beautifully exact.' (B.) T. could not follow the star to the Moon's Limb with the 46-inch Dollond, owing to the misty state of the sky. (n) 'Thick fog about the Moon, but the star was bright until it disappeared.' (B.) In the calculation of this occultation, the noted time is assumed to be 1<sup>m</sup> too late. (o) 'Seen immediately on its reappearance, as I was looking exactly at the place. The star was faint from fog, and the Moon unsteady.' (B.) (p) The observer saw the star well up to the time noted, but was uncertain whether it disappeared by the clouds thickening, or behind the Moon. (q) 'Exact to a tenth of a second: the Limb was partly illumined, but the disappearance took place at a dark part.' (B.) 'Doubtful to a few seconds, the star being very faint.' (T.)



Reappearance of 30 Piscium, Jan. 14,  $5^h.4^m.13^s.53 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$10.13.16.20 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$358.56.23.55 + 0.4763 \times (t + \tau) + x$
Moon's Geocentric N.P.D. ....	$96.9.50.18 - 0.2048 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$55.27.62 \times [9.9990916] \times (1 + 0.001 m)$
Moon's Geocentric Semidiameter.....	$15.8.57 \times (1 + 0.001 n)$
Star's Right Ascension in arc .....	$358.35.56.85 + e$
Star's N.P.D.....	$96.50.3.30 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc.....	$358.49.37.59 + \delta R$
Moon's apparent N.P.D.....	$96.57.11.11 + \delta \lambda$
Moon's apparent Semidiameter .....	$15.16.08 + \delta S$
Apparent Distance of Star from Moon's centre	$15.20.29 + \delta D$

$$\delta R = +0.3327t + 0.4811\tau + 1.0099x - 0.0002y - 0.4100m - 0.0025v$$

$$\delta \lambda = -0.2100t - 0.2064\tau + 0.0002x + 1.0082y + 2.8643m - 0.0084v$$

$$\delta S = -0.0001t + 0.9161n$$

$$\delta D = +0.8790\delta R - 0.8790e + 0.4647\delta \lambda - 0.4651f.$$

Final Equation:

$$-4''.21 = +0.8878x + 0.4683y - 0.8790e - 0.4651f + 0.1950t + 0.3269\tau - 0.0061v + 0.9706m - 0.9161n.$$

Disappearance of 33 Piscium, Jan. 14,  $6^h.18^m.25^s.22 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$28.49.14.40 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$359.31.41.70 + 0.4754 \times (t + \tau) + x$
Moon's Geocentric N.P.D. ....	$95.54.37.77 - 0.2051 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$55.25.67 \times [9.9990916] \times (1 + 0.001 m)$
Moon's Geocentric Semidiameter.....	$15.7.97 \times (1 + 0.001 n)$
Star's Right Ascension in arc .....	$359.26.47.25 + e$
Star's N.P.D. ....	$96.31.59.50 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc.....	$359.14.48.56 + \delta R$
Moon's apparent N.P.D. ....	$96.41.23.27 + \delta \lambda$
Moon's apparent Semidiameter.....	$15.14.53 + \delta S$
Apparent Distance of Star from Moon's centre	$15.10.29 + \delta D$

$$\delta R = +0.3483t + 0.4796\tau + 1.0087x - 0.0005y - 1.0220m - 0.0063v$$

$$\delta \lambda = -0.2149t - 0.2063\tau + 0.0006x + 1.0071y + 2.8254m - 0.0086v$$

$$\delta S = -0.0003t + 0.9154n$$

$$\delta D = -0.7790\delta R + 0.7790e + 0.6203\delta \lambda - 0.6206f.$$

Final Equation:

$$+4''.24 = -0.7855x + 0.6251y + 0.7790e - 0.6206f - 0.4043t - 0.5016\tau - 0.0004v + 2.5487m - 0.9145n.$$



Reappearance of 33 Piscium, Jan. 14, 7<sup>h</sup>. 30<sup>m</sup>. 24<sup>s</sup>. 71 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$46^{\circ}.52'.43'' + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$0^{\circ}.5.52,65 + 0,4743 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$95^{\circ}.39.51,41 - 0,2053 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$55.23,82 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	$15.7,45 \times (1 + 0,001n)$
Star's Right Ascension in arc .....	$359.26.47,25 + e''$
Star's N.P.D. ....	$96.31.59,50 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$

Moon's apparent Right Ascension in arc .....	$359.40.48,25 + \delta R$
Moon's apparent N.P.D. ....	$96.25.45,56 + \delta \lambda$
Moon's apparent Semidiameter .....	$15.12,36 + \delta S$
Apparent Distance of Star from Moon's centre	$15.15,48 + \delta D$

$$\delta R = +0,3753t + 0,4777\tau + 1,0068x - 0,0007y - 1,5147m - 0,0094v$$

$$\delta \lambda = -0,2183t - 0,2060\tau + 0,0008x + 1,0053y + 2,7684m - 0,0089v$$

$$\delta S = -0,0005t + 0,9124n$$

$$\delta D = +0,9069\delta R - 0,9069e - 0,4087\delta \lambda + 0,4083f.$$

Final Equation:

$$-3'',12 = +0,9128x - 0,4115y - 0,9069e + 0,4083f + 0,4301t + 0,5174\tau - 0,0049v - 2,5051m - 0,9124n.$$

Disappearance of  $n$  Tauri, Feb. 17, 10<sup>h</sup>. 10<sup>m</sup>. 24<sup>s</sup>. 40 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$120^{\circ}.29'.17'' + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$77.50.6,30 + 0,5364 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$67.43.18,74 - 0,0863 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54.48,88 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	$14.57,95 \times (1 + 0,001n)$
Star's Right Ascension in arc .....	$77.36.39,15 + e''$
Star's N.P.D. ....	$68.3.35,20 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$

Moon's apparent Right Ascension in arc .....	$77.25.16,19 + \delta R$
Moon's apparent N.P.D. ....	$68.14.12,70 + \delta \lambda$
Moon's apparent Semidiameter .....	$15.8,26 + \delta S$
Apparent Distance of Star from Moon's centre	$14.59,01 + \delta D$

$$\delta R = +0,4231t + 0,5403\tau + 1,0078x + 0,0030y - 1,5018m - 0,0093v$$

$$\delta \lambda = -0,0509t - 0,0886\tau - 0,0025x + 1,0115y + 1,8771m - 0,0126v$$

$$\delta S = -0,0004t + 0,9083n$$

$$\delta D = -0,6544\delta R + 0,6544e + 0,7095\delta \lambda - 0,7087f.$$

Final Equation:

$$+9'',25 = -0,6613x + 0,7157y + 0,6544e - 0,7087f - 0,3126t - 0,4165\tau - 0,0029v + 2,3147m - 0,9083n.$$



Disappearance of 95 Virginis, March 26, 11<sup>h</sup>. 1<sup>m</sup>. 33<sup>s</sup>. 25 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	169. 46. 43,20 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	209. 5. 30,60 + 0,5746 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	97. 37. 52,54 + 0,2469 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	60. 34,74 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	16. 32,38 $\times (1 + 0,001 n)$
Star's Right Ascension in arc.....	209. 44. 22,35 + $e''$
Star's N.P.D. ....	98. 36. 39,50 + $f$
Geocentric Colatitude of the Observatory .....	37. 58. 20,37 + $\nu$

Moon's apparent Right Ascension in arc.....	209. 29. 29,21 + $\delta R$
Moon's apparent N.P.D.....	98. 29. 14,61 + $\delta \lambda$
Moon's apparent Semidiameter.....	16. 38,69 + $\delta S$
Apparent Distance of Star from Moon's centre	16. 28,94 + $\delta D$

$$\delta R = +0,4523t + 0,5797\tau + 1,0085x + 0,0009y + 1,4508m + 0,0090\nu$$

$$\delta \lambda = +0,2633t + 0,2479\tau - 0,0010x + 1,0063y + 3,1008m - 0,0092\nu$$

$$\delta S = +0,0005t + 0,9987n$$

$$\delta D = -0,8832\delta R + 0,8832e - 0,4502\delta \lambda + 0,4496f.$$

Final Equation:

$$+9'',75 = -0,8902x - 0,4538y + 0,8832e + 0,4496f - 0,5185t - 0,6235\tau - 0,0038\nu - 2,6772m - 0,9987n.$$

Reappearance of 95 Virginis, March 26, 12<sup>h</sup>. 6<sup>m</sup>. 58<sup>s</sup>. 82 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	186. 10. 47,85 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	209. 43. 6,0 + 0,5712 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	97. 54. 0,17 + 0,2461 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	60. 34,79 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter.....	16. 32,40 $\times (1 + 0,001 n)$
Star's Right Ascension in arc.....	209. 44. 22,35 + $e''$
Star's N.P.D. ....	98. 36. 39,50 + $f$
Geocentric Colatitude of the Observatory .....	37. 58. 20,37 + $\nu$

Moon's apparent Right Ascension in arc.....	209. 58. 14,87 + $\delta R$
Moon's apparent N.P.D.....	98. 46. 17,76 + $\delta \lambda$
Moon's apparent Semidiameter.....	16. 40,20 + $\delta S$
Apparent Distance of Star from Moon's centre	16. 45,81 + $\delta D$

$$\delta R = +0,4252t + 0,5771\tau + 1,0101x + 0,0006y + 0,9181m + 0,0057\nu$$

$$\delta \lambda = +0,2577t + 0,2476\tau - 0,0007x + 1,0077y + 3,1618m - 0,0088\nu$$

$$\delta S = +0,0003t + 1,0002n$$

$$\delta D = +0,8088\delta R - 0,8088e + 0,5747\delta \lambda - 0,5752f.$$

Final Equation:

$$-5'',61 = +0,8166x + 0,5796y - 0,8088e - 0,5752f + 0,4917t + 0,6091\tau - 0,0005\nu + 2,5595m - 1,0002n.$$



Disappearance of  $\nu$  Virginis, April 20,  $6^h.55^m.18^s.39 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$132^\circ.41'.20''.85 + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$173.55.51,90 + 0,5504 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$81.47.26,84 + 0,2363 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59.25,81 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	$16.13,58 \times (1 + 0,001n)$
Star's Right Ascension in arc .....	$174.34.45,60 + e''$
Star's N.P.D. ....	$82.38.53,80 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + \nu$

Moon's apparent Right Ascension in arc .....	$174.20.21,93 + \delta R$
Moon's apparent N.P.D. ....	$82.30.13,79 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.23,16 + \delta S$
Apparent Distance of Star from Moon's centre	$16.41,99 + \delta D$

$$\delta R = +0,4331t + 0,5546\tau + 1,0081x - 0,0010y + 1,4820m + 0,0092\nu$$

$$\delta \lambda = +0,2252t + 0,2392\tau + 0,0009x + 1,0098y + 2,5928m - 0,0120\nu$$

$$\delta S = +0,0005t + 0,9832n$$

$$\delta D = -0,8476\delta R + 0,8476e - 0,5188\delta \lambda + 0,5192f.$$

Final Equation :

$$-18'',83 = -0,8550x - 0,5229y + 0,8476e + 0,5192f - 0,4844t - 0,5941\tau - 0,0016\nu - 0,0888m - 0,9832n.$$

The disappearance probably took place after the noted time. See the observation.

Reappearance of  $\nu$  Virginis, April 20,  $8^h.5^m.1^s.36 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$150^\circ.9'.57''.30 + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$174.34.14,10 + 0,5505 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$82.3.57,98 + 0,2376 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59.28,39 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	$16.14,28 \times (1 + 0,001n)$
Star's Right Ascension in arc .....	$174.34.45,60 + e''$
Star's N.P.D. ....	$82.38.53,80 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + \nu$

Moon's apparent Right Ascension in arc .....	$174.49.37,07 + \delta R$
Moon's apparent N.P.D. ....	$82.46.11,86 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.25,49 + \delta S$
Apparent Distance of Star from Moon's centre	$16.26,82 + \delta D$

$$\delta R = +0,4077t + 0,5558\tau + 1,0098x - 0,0006y + 0,9321m + 0,0058\nu$$

$$\delta \lambda = +0,2321t + 0,2406\tau + 0,0006x + 1,0114y + 2,5632m - 0,0122\nu$$

$$\delta S = +0,0003t + 0,9855n$$

$$\delta D = +0,8888\delta R - 0,8888e + 0,4442\delta \lambda - 0,4437f.$$

Final Equation :

$$-1'',33 = +0,8978x + 0,4487y - 0,8888e - 0,4437f + 0,4651t + 0,6008\tau - 0,0003\nu + 1,9670m - 0,9855n.$$



Disappearance of 95 Virginis, May 20, 8<sup>h</sup>.29<sup>m</sup>.54<sup>s</sup>.11 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	185°.58'.19.65 + 15.0411 × $t$
Moon's Geocentric Right Ascension in arc .....	209.13. 7.50 + 0.5751 × ( $t + \tau$ ) + $x''$
Moon's Geocentric N.P.D. ....	97.40.29.15 + 0.2511 × ( $t + \tau$ ) + $y$
Moon's Horizontal Parallax at the Observatory	60.50.42 × [9.9990916] × (1 + 0.001 $m$ )
Moon's Geocentric Semidiameter .....	16.36.75 × (1 + 0.001 $n$ )
Star's Right Ascension in arc.....	209.44.28.50 + $e''$
Star's N.P.D. ....	98.36.40.50 + $f$
Geocentric Colatitude of the Observatory .....	37.58.20.37 + $\nu$
Moon's apparent Right Ascension in arc.....	209.28. 9.16 + $\delta R$
Moon's apparent N.P.D. ....	98.32.54.67 + $\delta \lambda$
Moon's apparent Semidiameter.....	16.44.70 + $\delta S$
Apparent Distance of Star from Moon's centre	16.34.41 + $\delta D$

$$\delta R = +0.4283t + 0.5811\tau + 1.0102x + 0.0006y + 0.9108m + 0.0057\nu$$

$$\delta \lambda = +0.2625t + 0.2527\tau - 0.0007x + 1.0079y + 3.1702m - 0.0089\nu$$

$$\delta S = +0.0003t + 1.0047n$$

$$\delta D = -0.9630\delta R + 0.9630e - 0.2274\delta \lambda + 0.2268f.$$

Final Equation :

$$+10''.29 = -0.9726x - 0.2298y + 0.9630e + 0.2268f - 0.4725t - 0.6171\tau - 0.0034\nu - 1.5982m - 1.0047n.$$

Reappearance of 95 Virginis, May 20, 9<sup>h</sup>.34<sup>m</sup>.29<sup>s</sup>.81 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	202. 9'.54.45 + 15.0411 × $t$
Moon's Geocentric Right Ascension in arc .....	209.50.18.90 + 0.5765 × ( $t + \tau$ ) + $x''$
Moon's Geocentric N.P.D. ....	97.56.41.33 + 0.2505 × ( $t + \tau$ ) + $y$
Moon's Horizontal Parallax at the Observatory	60.51.99 × [9.9990916] × (1 + 0.001 $m$ )
Moon's Geocentric Semidiameter .....	16.39.02 × (1 + 0.001 $n$ )
Star's Right Ascension in arc.....	209.44.28.50 + $e''$
Star's N.P.D. ....	98.36.40.50 + $f$
Geocentric Colatitude of the Observatory .....	37.58.20.37 + $\nu$
Moon's apparent Right Ascension in arc.....	209.55.24.52 + $\delta R$
Moon's apparent N.P.D. ....	98.49.41.15 + $\delta \lambda$
Moon's apparent Semidiameter.....	16.47.71 + $\delta S$
Apparent Distance of Star from Moon's centre	16.54.83 + $\delta D$

$$\delta R = +0.4175t + 0.5829\tau + 1.0110x + 0.0002y + 0.3090m + 0.0019\nu$$

$$\delta \lambda = +0.2560t + 0.2526\tau - 0.0002x + 1.0086y + 3.2072m - 0.0087\nu$$

$$\delta S = +0.0001t + 1.0077n$$

$$\delta D = +0.6316\delta R - 0.6316e + 0.7691\delta \lambda - 0.7694f.$$

Final Equation :

$$-7''.12 = +0.6384x + 0.7758y - 0.6316e - 0.7694f + 0.4604t + 0.5624\tau - 0.0055\nu + 2.6618m - 1.0077n.$$

Disappearance of 38 Arietis, Sept. 20, 13<sup>h</sup>. 50<sup>m</sup>. 42<sup>s</sup>. 27 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$27^{\circ} . 37' . 38'' . 85 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$38 . 53 . 31,80 + 0,4795 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$77 . 39 . 15,21 - 0,1921 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54 . 47,80 \times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	$14 . 57,71 \times (1 + 0,001 n)$
Star's Right Ascension in arc .....	$39 . 14 . 52,80 + e''$
Star's N.P.D. ....	$78 . 10 . 19,00 + f$
Geocentric Colatitude of the Observatory .....	$37 . 58 . 20,37 + v$

Moon's apparent Right Ascension in arc.....	$39^{\circ} . 0' . 19'' . 46 + \delta R$
Moon's apparent N.P.D. ....	$78 . 14 . 44,07 + \delta \lambda$
Moon's apparent Semidiameter.....	$15 . 8,62 + \delta S$
Apparent Distance of Star from Moon's centre .	$14 . 55,06 + \delta D$

$$\delta R = + 0,3352 t + 0,4843 \tau + 1,0099 x - 0,0004 y + 0,4117 m + 0,0026 v$$

$$\delta \lambda = - 0,2003 t - 0,1943 \tau + 0,0004 x + 1,0121 y + 2,1547 m - 0,0122 v$$

$$\delta S = + 0,0001 t + 0,9086 n$$

$$\delta D = - 0,9350 \delta R + 0,9350 e + 0,2966 \delta \lambda - 0,2957 f.$$

Final Equation :

$$+13'',56 = -0,9442 x + 0,3006 y + 0,9350 e - 0,2957 f - 0,3729 t - 0,5105 \tau - 0,0060 v + 0,2541 m - 0,9086 n.$$

Disappearance of  $\theta$  Ophiuchi, Oct. 7, 5<sup>h</sup>. 47<sup>m</sup>. 51<sup>s</sup>. 74 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$283^{\circ} . 5' . 32'' . 10 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$258 . 22 . 46,80 + 0,5615 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$113 . 40 . 22,56 + 0,1007 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59 . 47,13 \times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter.....	$16 . 19,37 \times (1 + 0,001 n)$
Star's Right Ascension in arc .....	$258 . 14 . 59,55 + e''$
Star's N.P.D. ....	$114 . 50 . 57,30 + f$
Geocentric Colatitude of the Observatory .....	$37 . 58 . 20,37 + v$

Moon's apparent Right Ascension in arc.....	$258^{\circ} . 5' . 50'' . 71 + \delta R$
Moon's apparent N.P.D.....	$114 . 37 . 0,42 + \delta \lambda$
Moon's apparent Semidiameter.....	$16 . 22,56 + \delta S$
Apparent Distance of Star from Moon's centre .	$16 . 14,10 + \delta D$

$$\delta R = + 0,4066 t + 0,5672 \tau + 1,0107 x - 0,0022 y - 1,0270 m - 0,0064 v$$

$$\delta \lambda = + 0,0737 t + 0,1021 \tau + 0,0019 x + 1,0031 y + 3,4078 m - 0,0046 v$$

$$\delta S = - 0,0003 t + 0,9826 n$$

$$\delta D = - 0,4648 \delta R + 0,4648 e - 0,8594 \delta \lambda + 0,8589 f.$$

Final Equation :

$$+8'',46 = -0,4714 x - 0,8611 y + 0,4648 e + 0,8588 f - 0,2521 t - 0,3514 \tau + 0,0069 v - 2,4513 m - 0,9826 n.$$



Reappearance of  $\theta$  Ophiuchi, Oct. 7, 6<sup>h</sup>.35<sup>m</sup>.8<sup>s</sup>.73 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$295^{\circ}.11'.43''.50 + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$258^{\circ}.52'.49''.50 + 0''.6453 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$113^{\circ}.45'.11''.19 + 0''.0985 \times (t + \tau) + y''$
Moon's Horizontal Parallax at the Observatory	$59''.46,41 \times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	$16''.19,17 \times (1 + 0,001 n)$
Star's Right Ascension in arc.....	$258^{\circ}.14'.59''.55 + e''$
Star's N.P.D. ....	$114^{\circ}.50'.57''.30 + f''$
Geocentric Colatitude of the Observatory .....	$37^{\circ}.58'.20''.37 + v''$
Moon's apparent Right Ascension in arc.....	$258^{\circ}.28'.51''.28 + \delta R$
Moon's apparent N.P.D. ....	$114^{\circ}.40'.13''.66 + \delta \lambda$
Moon's apparent Semidiameter.....	$16''.21,34 + \delta S$
Apparent Distance of Star from Moon's centre	$16''.32,32 + \delta D$

$$\delta R = +0,5091t + 0,6511\tau + 1,0094x - 0,0031y - 1,4518m - 0,0090v$$

$$\delta \lambda = +0,0603t + 0,1005\tau + 0,0027x + 1,0021y + 3,3077m - 0,0051v$$

$$\delta S = -0,0004t + 0,9813n$$

$$\delta D = +0,6912\delta R - 0,6912e - 0,6493\delta \lambda + 0,6480f.$$

Final Equation:

$$-10'',98 = +0,6959x - 0,6528y - 0,6912e + 0,6480f + 0,3131t + 0,3848\tau - 0,0029v - 3,1510m - 0,9813n.$$

Disappearance of  $\beta$  Piscium, Oct. 14, 9<sup>h</sup>.53<sup>m</sup>.58<sup>s</sup>.95 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$351^{\circ}.56'.24''.75 + 15''.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$359^{\circ}.7'.31''.05 + 0''.4871 \times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	$95^{\circ}.45'.34''.79 - 0''.2248 \times (t + \tau) + y''$
Moon's Horizontal Parallax at the Observatory	$56''.10,08 \times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	$15''.20,11 \times (1 + 0,001 n)$
Star's Right Ascension in arc .....	$359^{\circ}.27'.46''.65 + e''$
Star's N.P.D. ....	$96^{\circ}.31'.32''.90 + f''$
Geocentric Colatitude of the Observatory .....	$37^{\circ}.58'.20''.37 + v''$
Moon's apparent Right Ascension in arc.....	$359^{\circ}.11'.53''.79 + \delta R$
Moon's apparent N.P.D. ....	$96^{\circ}.33'.22''.93 + \delta \lambda$
Moon's apparent Semidiameter.....	$15''.28,01 + \delta S$
Apparent Distance of Star from Moon's centre	$15''.53,03 + \delta D$

$$\delta R = +0,3399t + 0,4920\tau + 1,0101x + 0,0001y + 0,2654m + 0,0017v$$

$$\delta \lambda = -0,2246t - 0,2268\tau - 0,0002x + 1,0085y + 2,8926m - 0,0086v$$

$$\delta S = +0,0001t + 0,9280n$$

$$\delta D = -0,9869\delta R + 0,9869e + 0,1152\delta \lambda - 0,1157f.$$

Final Equation:

$$-25'',02 = -0,9969x + 0,1160y + 0,9868e - 0,1157f - 0,3613t - 0,5116\tau - 0,0026v + 0,0713m - 0,9280n.$$

Probably the immersion took place after the noted time. See the observation.

Disappearance of 33 Ceti, Dec. 9, 9<sup>h</sup>.10<sup>m</sup>.0<sup>s</sup>.56 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	36. 6'. 47''.70 + 15''.0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	16. 2. 42.75 + 0,4646 $\times (t + \tau) + x''$
Moon's Geocentric N.P.D. ....	87. 51. 30.25 - 0,2225 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	55. 22.24 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15. 7.00 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	15. 45. 36.15 + $e''$
Star's N.P.D. ....	88. 20. 0.70 + $f$
Geocentric Colatitude of the Observatory.....	37. 58. 20.37 + $\nu$
Moon's apparent Right Ascension in arc .....	15. 50. 55''.68 + $\delta R$
Moon's apparent N.P.D. ....	88. 34. 15.11 + $\delta \lambda$
Moon's apparent Semidiameter .....	15. 15.86 + $\delta S$
Apparent Distance of Star from Moon's centre .	15. 12.16 + $\delta D$

$$\delta R = +0,3280t + 0,4689\tau + 1,0094x + 0,0001y - 0,7136m - 0,0044\nu$$

$$\delta \lambda = -0,2234t - 0,2247\tau - 0,0001x + 1,0097y + 2,5898m - 0,0103\nu$$

$$\delta S = -0,0002t - 0,9159n$$

$$\delta D = +0,3500\delta R - 0,3500e + 0,9367\delta \lambda - 0,9367f.$$

Final Equation:

$$+3'',70 = +0,3532x + 0,9458y - 0,3500e - 0,9367f - 0,0942t - 0,0463\tau - 0,0112\nu + 2,1762m - 0,9159n.$$



THE HISTORY OF THE

THE HISTORY OF THE

THE HISTORY OF THE

THE HISTORY OF THE

APPARENT RIGHT ASCENSIONS

OBSERVED WITH

THE TRANSIT

IN THE YEAR 1854.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.		
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.						
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.
Jan. 2	(a) $\odot$ 2 L. ....	33,2	47,9	2,5	....	....	....	1,2	18.52.17,20	-4,3	+6,8	+12,1	17,54		1,37	18.52.42,57		
	$\beta$ Ceti. ....	6,3	20,7	34,8	49,0	3,7	17,4	31,7	0.35.49,09				49,44	25,27		0.36.14,80		
	$\alpha$ Arietis. ....	47,2	1,8	16,2	31,0	45,8	0,0	14,6	1.58.30,94				31,20	25,28		1.58.56,63		
	Euterpe. ....	13,1	....	....	....	....	....	....	2.50.54,91				55,17			2.51.20,65		
	Euterpe B. ....	43,2	57,1	51,3	5,1	....	....	....	2.50.55,42				55,54			2.51.21,02		
	$\alpha$ Ceti. ....	32,7	46,1	59,7	13,0	26,6	39,8	53,4	2.54.13,04				13,31	25,65		2.54.38,80		
	$\alpha$ Ceti B. ....	3,3	16,7	7,2	20,7	....	....	....	2.54.13,18				13,21			2.54.38,70		
	* N.P.D. 74° 53'. ....	37,0	51,0	4,9	18,8	33,1	46,8	0,8	3.1.18,92				19,16			3.1.44,65		
	* N.P.D. 74° 53' B. ....	7,0	20,6	14,9	28,6	....	....	....	3.1.19,02				19,14			3.1.44,63		
	* N.P.D. 74° 38'. ....	11,2	25,2	38,9	53,0	7,2	21,0	35,0	3.6.53,07				53,31			3.7.18,81		
	* N.P.D. 74° 38' B. ....	40,9	54,7	49,3	....	....	....	....	3.6.53,17				53,29			3.7.18,79		
	Irene B. ....	30,4	44,4	....	53,6	....	....	....	3.42.43,26				43,34			3.43.8,87		
	Rigel. ....	24,8	38,5	52,1	5,7	19,7	32,8	46,7	5.7.5,76				6,11	25,70		5.7.31,72		
Jan. 7	Aldebaran. ....	17,4	31,2	45,1	59,6	13,2	27,2	41,2	4.26.59,28	+4,0		+3,4	0,43	32,48	1,55			
Jan. 13	$\delta$ Ursæ Minoris. ....	55,7	42,8	....	17,0	3,7	49,1	34,8	18.18.15,73		+7,4		24,83		1,83			
Jan. 14	$\odot$ 1 L. ....	14,8	29,3	43,6	58,3	12,6	27,3	41,6	19.41.58,22				59,29			19.42.43,56		
	$\odot$ 2 L. ....	....	49,6	3,8	18,6	33,1	47,4	....	19.44.18,49				19,56			19.45.3,84		
	$\beta$ Ceti. ....	46,4	0,4	14,5	29,1	43,1	57,3	11,4	0.35.28,89		+1,5		29,81	44,75				
	(b) $\alpha$ Ceti. ....	12,7	26,2	39,6	53,2	6,8	20,2	33,4	2.53.53,16				54,07	44,73				
	H. C. 7102. ....	33,4	48,0	2,2	16,7	31,6	45,8	0,3	3.42.16,86				17,67			3.43.2,55		
	(c) H. C. 7230. ....	7,1	21,4	35,7	50,2	4,6	18,6	32,8	3.46.50,05				50,87			3.47.35,76		
Jan. 18	$\alpha$ Aquilæ. ....	....	16,0	29,3	43,2	56,8	10,0	24,0	19.42.43,08		+1,1		43,96	53,57	1,83			
Jan. 19	(d) $\odot$ 1 L. ....	29,4	43,8	58,2	12,9	27,3	41,6	55,7	20.3.12,70				13,62			20.4.7,22		
	$\odot$ 2 L. ....	48,8	3,3	17,3	32,0	46,6	0,7	15,2	20.5.31,98				32,90			20.6.26,50		
	$\alpha$ Aquilæ. ....	0,2	14,1	27,6	41,5	55,0	8,6	22,2	19.42.41,31				42,19	55,36	1,85	19.43.37,58		
Jan. 20	(e) $\odot$ 2 L. ....	....	....	30,0	44,7	59,0	13,4	27,6	20.9.44,58			+3,5	45,50			20.10.40,93		
	(b)(f) Rigel. ....	54,1	7,7	....	....	....	....	....	5.6.34,88				35,76	55,99				
	(g) Sirius. ....	4,4	18,2	32,2	46,4	0,4	14,4	28,3	6.37.46,33				47,23	56,37		6.38.43,46		
	$\epsilon$ Hydræ. ....	25,3	38,8	52,2	6,0	19,6	32,8	46,5	8.38.5,89				6,79	56,32		8.39.3,18		
Jan. 21	(h) $\odot$ 1 L. ....	54,6	8,8	23,0	37,6	51,8	6,2	20,6	20.11.37,52				38,44		1,86	20.12.35,73		
	$\odot$ 2 L. ....	....	....	42,0	56,3	10,8	25,2	39,3	20.13.56,38				57,30			20.14.54,59		
	(i) $\alpha$ Andromedæ. ....	....	20,6	35,7	51,0	6,4	21,6	37,0	23.59.51,08				51,83	57,51		0.0.49,41		
	Aldebaran. ....	52,2	6,1	20,0	34,2	48,2	2,2	16,3	4.26.34,17				35,00	57,83		4.27.32,93		
	Rigel. ....	....	....	19,2	32,8	46,6	0,3	13,6	5.6.32,91				33,79	57,95		5.7.31,77		
	Procyon. ....	....	13,8	27,2	40,8	54,5	8,0	....	7.30.40,85				41,75	58,35		7.31.39,91		
Jan. 23	(b) Sirius. ....	58,6	....	26,6	....	54,7	8,7	23,0	6.37.40,73				41,63	61,96	1,76			
Jan. 24	(g) $\alpha$ Orionis. ....	....	45,1	58,2	12,3	25,4	39,2	....	5.46.12,03				12,92	63,55	1,78			
	$\epsilon$ Hydræ. ....	17,8	31,3	44,8	58,6	12,2	25,4	39,2	8.37.58,47				59,37	63,78				
	$\delta$ Ursæ Minoris. ....	43,0	30,8	....	....	50,5	36,0	....	18.18.2,97				6,16			18.19.10,65		
Jan. 25	$\odot$ 1 L. ....	35,3	49,4	3,7	18,0	32,4	46,4	0,7	20.28.17,99				18,91			20.29.23,56		
	$\odot$ 2 L. ....	....	7,4	21,6	36,0	50,2	4,3	18,8	20.30.35,92				36,84			20.31.41,49		
	$\alpha$ Ophiuchi. ....	19,6	33,6	47,0	0,7	15,0	28,6	42,1	17.27.0,94				1,79	66,15	1,83	17.28.7,91		
Jan. 26	$\alpha$ Ceti. ....	50,3	4,0	17,3	30,9	44,4	57,8	11,5	2.53.30,88				31,78	66,87		2.54.38,62		
	H. C. 5823. ....	38,8	52,8	6,5	20,9	34,9	48,8	3,0	3.0.20,81				21,64			3.1.28,49		
	H. C. 6050. ....	8,0	22,1	36,2	50,2	4,2	18,3	32,4	3.7.50,20				51,02			3.8.57,88		
	Aldebaran. ....	42,8	56,8	10,8	25,2	39,2	53,3	6,7	4.26.24,97				25,80	66,98		4.27.32,76		
	$\tau$ Tauri. ....	37,8	52,3	6,9	21,6	36,2	50,6	5,2	4.32.21,51				22,29			4.33.29,26		
	H. C. 8876. ....	....	54,6	9,2	24,2	39,0	53,6	....	4.34.24,11				24,88			4.35.31,85		

ILLUMINATION WEST. From Jan. 7, EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327. From Jan. 7, -40°,327, -26°,895, -13°,656, -0°,010, +13°,633, +26°,905, +40°,349.

For the Intervals of the Bars from the mean of the seven wires see the Introduction.

(a) Cloudy; 1 L hid. (b) Cloudy. (c) Misty cloud. (d) Unsteady. (e) Clouded and very unsteady. (f) A weight of two-sevenths is given to the clock-error by this observation. (g) A large disk. (h) Dimly seen through thick cloud. (i) Faint from cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
Jan. 26	B. (w.) iv. 823...	21,1	34,8	48,7	2,8	16,7	30,8	44,4	4. 37. 2,76	+4,0	+1,1	+3,5	3,60		1,83	4. 38. 10,57			B.
	B. (w.) iv. 866...	41,3	55,0	9,2	23,2	37,2	51,0	5,1	4. 39. 23,14				23,98			4. 40. 30,96			B.
	H. C. 9088.....	13,8	27,6	41,4	55,8	9,5	23,4	37,3	4. 41. 55,54				56,38			4. 43. 3,36			B.
	H. C. 9170.....	55,1	10,0	24,3	39,3	54,0	8,7	23,4	4. 44. 39,26				40,03			4. 45. 47,01			B.
	H. C. 9252.....	33,2	47,4	1,2	15,7	29,6	43,6	57,6	4. 47. 15,47				16,30			4. 48. 23,29			B.
	H. C. 9409.....	14,2	28,9	43,2	57,7	11,9	26,2	40,8	4. 51. 57,56				58,36			4. 53. 5,35			B.
	H. C. 9721.....	22,1	36,2	50,2	4,7	18,6	32,8	46,7	5. 1. 4,47				5,29			5. 2. 12,29			B.
	H. C. 9786.....	37,8	52,8	7,6	22,9	37,7	52,7	7,6	5. 4. 22,73				23,50			5. 5. 30,51			B.
	Rigel.....	43,2	56,6	10,0	23,6	37,5	50,8	4,6	5. 6. 23,76				24,64	67,05		5. 7. 31,65			B.
	H. C. 9887.....	....	10,6	24,8	39,6	54,0	8,5	....	5. 8. 39,49				40,28			5. 9. 47,29			B.
	H. C. 10007.....	51,6	7,0	22,2	37,8	53,1	8,5	23,9	5. 12. 37,73				38,48			5. 13. 45,50			B.
	β Tauri.....	10,6	25,9	41,2	56,6	11,7	27,1	42,2	5. 15. 56,47				57,22	66,88		5. 17. 4,24			B.
Jan. 28	(a) H. C. 7586.....	0,1	14,5	29,1	44,0	58,7	13,2	27,8	3. 56. 43,91		+0,8		44,67		1,91	3. 57. 55,46			B.
	H. C. 7759.....	9,2	24,1	38,7	53,6	8,2	23,1	37,8	4. 1. 53,53				54,27			4. 3. 5,06			B.
	B. (w.) iv. 103 ..	13,1	27,2	40,9	55,0	8,8	22,8	36,5	4. 4. 54,90				55,74			4. 6. 6,54			B.
	ω <sup>8</sup> Tauri.....	48,0	2,4	16,6	30,9	45,3	59,7	14,0	4. 7. 30,98				31,76			4. 8. 42,56			B.
	φ Tauri.....	....	41,0	55,9	11,3	26,5	41,4	....	4. 10. 11,21				11,95			4. 11. 22,75			B.
	63 Tauri.....	8,9	23,0	37,1	51,2	5,0	19,0	33,1	4. 13. 51,04				51,86			4. 15. 2,67			B.
	B. (w.) iv. 356 ..	53,9	7,8	21,6	35,9	49,6	3,5	17,5	4. 16. 35,69				36,52			4. 17. 47,33			B.
	θ <sup>1</sup> Tauri.....	20,6	34,6	48,6	2,7	16,8	30,6	44,6	4. 19. 2,64				3,46			4. 20. 14,28			B.
	85 Tauri.....	38,1	52,1	5,8	20,2	33,9	47,8	2,0	4. 22. 19,98				20,81			4. 23. 31,63			B.
	Aldebaran.....	38,8	53,1	6,8	21,3	35,2	49,2	3,2	4. 26. 21,08				21,81	70,95		4. 27. 32,64			B.
	Rigel.....	39,1	52,6	6,2	19,8	33,4	47,2	0,6	5. 6. 19,85				20,72	70,96		5. 7. 31,60			B.
	δ Ursæ Min. SP.	....	....	14,8	1,5	51,8	34,6	23,0	6. 18. 2,72				0,25			6. 19. 11,22			B.
	Castor.....	18,1	33,9	49,8	5,8	21,7	37,7	53,5	7. 24. 5,79				6,50	70,89		7. 25. 17,56			B.
	Procyon.....	47,6	1,1	14,6	28,3	41,7	55,2	8,7	7. 30. 28,17				29,06	71,06		7. 31. 40,13			B.
	Pollux.....	25,6	41,0	55,9	11,6	27,0	42,1	57,5	7. 35. 11,53				12,26	70,97		7. 36. 23,33			B.
	(b) α Hydræ.....	....	46,2	59,6	13,5	26,8	40,6	....	9. 19. 13,33				14,20	71,27		9. 20. 25,41			B.
Jan. 30	(c) ☉ 2 L.....	....	39,2	53,1	7,4	21,6	35,8	49,7	20. 51. 7,39			+2,6	8,34		1,84	20. 52. 22,36			B.
	α Andromedæ...	48,2	3,6	18,6	34,2	49,6	4,8	20,0	23. 59. 34,14				34,99	74,24					B.
	(d) α Aquilæ ..	....	....	....	21,0	34,6	48,1	1,8	19. 42. 20,95				21,91	75,79					B.
Feb. 1	(e) δ Ursæ Minoris..	....	....	0,0	50,5	....	21,8	8,0	18. 17. 48,98				52,46		1,70	18. 19. 11,72			B.
	α Aquilæ.....	....	....	....	17,3	31,2	44,6	58,2	19. 42. 17,40				18,36	79,37		19. 43. 37,72			B.
Feb. 2	☉ 1 L.....	18,3	32,2	46,2	0,3	14,6	28,7	42,7	21. 1. 0,42				1,36			21. 2. 20,81			B.
	☉ 2 L.....	34,2	48,2	2,3	16,8	30,8	45,0	59,0	21. 3. 16,62				17,56			21. 4. 37,01			B.
	α Andromedæ...	43,0	58,2	13,3	29,0	44,2	59,4	14,4	23. 59. 28,79				29,64	79,56		0. 0. 49,30			B.
	H. C. 7987.....	5,0	19,1	32,8	47,0	1,0	15,0	29,2	4. 7. 47,02				47,94			4. 9. 7,89			B.
	H. C. 8100.....	10,6	25,6	40,5	55,9	11,0	26,0	41,0	4. 10. 55,80				56,66			4. 12. 16,62			B.
	B. (w.) iv. 366...	14,0	28,3	42,1	56,2	10,2	24,0	37,8	4. 13. 56,09				57,01			4. 15. 16,97			B.
	H. C. 8333.....	25,8	40,0	54,2	8,7	22,8	37,0	51,4	4. 17. 8,56				9,45			4. 18. 29,41			B.
	H. C. 8434.....	31,5	46,2	0,9	15,6	30,0	44,9	59,4	4. 20. 15,50				16,37			4. 21. 36,34			B.
	Aldebaran.....	29,8	44,1	57,8	12,0	26,0	40,2	54,0	4. 26. 11,98				12,90	79,80		4. 27. 32,88			B.
	(f) δ Ursæ Min. SP.	36,5	....	7,0	53,8	44,0	27,3	13,8	6. 17. 54,88				51,74			6. 19. 11,85			B.
	B. (w.) vi. 990...	34,3	48,3	2,0	16,0	29,9	43,7	57,6	6. 31. 15,97				16,91			6. 32. 37,03			B.
	Sirius.....	40,2	54,4	8,0	22,4	36,6	50,5	4,5	6. 37. 22,37				23,31	80,24		6. 38. 43,44			B.
	B.A.C. 2221.....	....	....	37,2	51,3	5,2	18,9	32,8	6. 38. 51,21				52,15			6. 40. 12,28			B.
	B. (w.) vi. 1286..	10,0	23,8	37,4	51,4	5,6	19,2	33,0	6. 40. 51,48				52,42			6. 42. 12,56			B.
	* N.P.D. 104°. 4'	37,6	51,5	4,9	19,2	33,2	47,0	0,4	6. 46. 19,12				20,06			6. 47. 40,20			B.
	μ Canis Majoris..	23,3	37,2	50,8	4,8	18,7	32,6	46,3	6. 48. 4,81				5,75			6. 49. 25,89			B.
	B. (w.) vi. 1757..	21,1	35,2	48,8	2,8	16,8	30,6	44,4	6. 55. 2,81				3,75			6. 56. 23,90			B.
	B. (w.) vi. 1827..	17,3	31,2	44,9	59,1	12,8	26,6	40,2	6. 56. 58,88				59,82			6. 58. 19,97			B.
	B. (w.) vi. 1890..	58,2	12,2	25,8	40,0	53,8	7,7	21,4	6. 58. 39,87				40,81			7. 0. 0,97			B.
	Procyon.....	....	....	5,2	18,6	32,1	46,0	59,4	7. 30. 18,75				19,72	80,41		7. 31. 39,91			B.
	Melpomene.....	31,1	45,0	58,7	12,9	26,4	40,3	54,3	8. 25. 12,67				13,60			8. 26. 33,86			B.
	Hygeia.....	17,8	31,3	44,7	58,9	12,8	26,7	40,3	9. 16. 58,93				59,86			9. 17. 20,18			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°, 327, - 26°, 895, - 13°, 656, - 0°, 010, + 13°, 633, + 26°, 905, + 40°, 349.

(a) The counting being 1<sup>st</sup> slow the noted times have been altered accordingly. (b) Misty cloud over the sky. (c) Cloudy. (d) Thick cloud passing. This observation is grouped with the preceding clock-star. (e) Very faint and unsteady. (f) Great motion.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Feb. 2	Hygeia B.....	47,3	1,1	54,1	8,0	....	....	....	9.15.59,23	+4,0	+0,8	+2,6	59,96		1,70	9.17.20,28			B.
	α Hydræ.....	23,5	37,1	50,7	4,5	18,0	31,3	45,3	9.19.4,34				5,27	80,26		9.20.25,59			B.
	α Aquilæ.....	35,1	48,8	2,1	16,0	29,6	43,0	56,7	19.42.15,90				16,86	80,89	1,67	19.43.37,90			B.
Feb. 3	☉ 1 L.....	...	34,0	47,8	2,0	16,2	30,2	44,3	21.5.2,04				2,98			21.6.24,12			B.
	☉ 2 L.....	36,0	50,0	4,0	18,0	32,0	46,2	0,2	21.7.18,06				19,00			21.8.40,14			B.
	H. C. 6369.....	29,8	44,1	58,1	12,4	26,7	40,6	55,0	3.18.12,38				13,28			3.19.34,85			B.
	H. C. 6456.....	29,3	43,6	57,6	12,0	26,0	40,1	54,0	3.21.11,80				12,70			3.22.34,28			B.
	H. C. 6549.....	23,9	38,0	52,0	6,2	20,2	34,3	48,4	3.24.6,14				7,05			3.25.28,63			B.
	Aldebaran.....	28,2	42,2	56,1	10,2	24,2	38,3	52,2	4.26.10,20				11,12	81,57		4.27.32,77			B.
	B. (w.) vi. 990...	32,6	46,5	0,3	14,4	28,2	42,0	55,8	6.31.14,26				15,20			6.32.37,00			B.
	(a) Sirius.....	38,4	52,6	6,4	20,6	34,7	48,5	2,5	6.37.20,52				21,46	82,09		6.38.43,26			B.
	B. A. C. 2221...	...	21,8	35,3	49,6	3,3	17,2	....	6.38.49,43				50,37			6.40.12,17			B.
	B. (w.) vi. 1286..	8,0	22,1	35,6	49,8	3,7	17,3	31,3	6.40.49,69				50,63			6.42.12,44			B.
	B. (w.) vi. 1474..	2,8	16,6	30,2	44,2	58,2	11,9	25,8	6.46.44,24				45,18			6.48.6,99			B.
	(b) μ Canis Majoris..	...	35,6	48,9	3,2	17,2	31,0	....	6.48.3,17				4,11			6.49.25,92			B.
	B. (w.) vi. 1757...	...	33,6	47,2	1,1	15,2	28,9	....	6.55.1,19				2,13			6.56.23,95			B.
	B. (w.) vi. 1827...	15,6	29,6	43,1	57,3	11,1	24,9	38,8	6.56.57,20				58,14			6.58.19,97			B.
	H. C. 13848.....	38,1	51,8	5,6	19,4	33,2	46,8	1,0	6.59.19,42				20,36			7.0.42,19			B.
	* N.P.D. 103°. 33'	...	51,5	5,2	19,3	33,0	46,8	....	7.7.19,15				20,09			7.8.41,93			B.
	* N.P.D. 103°. 25'	59,6	13,6	27,2	41,0	55,1	8,9	22,6	7.8.41,14				42,08			7.10.3,92			B.
	* N.P.D. 102°. 54'	46,0	59,8	13,5	27,6	41,4	55,0	9,0	7.18.27,47				28,41			7.19.50,26			B.
	(c) * N.P.D. 102°. 40'	...	49,5	3,0	17,0	30,8	44,6	....	7.20.16,97				17,91			7.21.39,76			B.
	Castor.....	7,2	23,1	38,8	55,0	10,8	26,7	42,6	7.23.54,89				55,73	81,67		7.25.17,59			B.
	Procyon.....	36,7	50,3	3,7	17,3	31,2	44,3	57,6	7.30.17,30				18,27	81,86		7.31.40,13			B.
	Pollux.....	14,7	30,2	45,3	0,8	16,0	31,1	46,6	7.35.0,67				1,52	81,72		7.36.23,39			B.
	Melpomene.....	30,6	44,2	57,6	11,8	25,8	39,5	53,1	8.24.11,80				12,73			8.25.34,66			B.
	ε Hydræ.....	59,7	13,2	26,3	40,2	53,9	7,3	20,8	8.37.40,20				41,17	82,08		8.39.3,11			B.
	Hygeia.....	26,6	40,2	53,7	8,0	21,8	35,7	49,3	9.15.7,90				8,83			9.16.30,82			B.
	α Hydræ.....	21,8	35,4	48,7	2,6	16,3	29,6	43,2	9.19.2,51				3,44	82,09		9.20.25,43			B.
Feb. 4	☉ 1 L.....	20,8	34,8	48,8	3,0	16,9	31,0	45,0	21.9.2,90				3,84		1,70	21.10.26,63			B.
	☉ 2 L.....	36,4	50,4	4,5	18,6	32,8	46,7	0,8	21.11.18,60				19,54			21.12.42,33			B.
	α Andromedæ...	39,6	54,8	10,0	25,3	40,6	56,0	11,1	23.59.25,34				26,19	82,99					B.
Feb. 5	(d) δ Ursæ Minoris...	....	....	....	44,8	30,8	16,0	3,4	18.18.43,62			+0,9	+2,4	47,33	1,71	18.19.13,77			B.
Feb. 6	☉ 1 L.....	19,8	33,9	48,0	2,0	16,0	30,0	44,0	21.18.1,95				2,77			21.18.29,42			B.
	☉ 2 L.....	35,2	49,3	3,2	17,3	31,3	45,2	59,2	21.20.17,24				18,06			21.20.44,71			B.
	α Orionis.....	7,7	21,3	34,6	48,4	2,2	15,4	29,1	5.46.48,39				49,22	27,17					B.
	δ Urs. Min. SP..	...	16,8	2,7	48,5	38,5	22,5	....	6.18.49,95				46,59			6.19.13,88			B.
	Sirius.....	33,3	47,4	1,1	15,3	29,3	43,4	57,4	6.38.15,31				16,14	27,38					B.
Feb. 7	Aldebaran.....	21,2	35,2	49,2	3,1	17,0	31,3	45,2	4.27.3,17				3,95	28,68	1,77	4.27.32,73			B.
	(e) Melpomene.....	35,0	49,0	3,0	16,8	30,5	44,3	57,8	8.21.16,63				17,43			8.21.46,50			B.
	ε Hydræ.....	52,6	6,3	19,6	33,4	47,1	0,5	13,7	8.38.33,31				34,15	29,11		8.39.3,24			B.
	Hygeia.....	0,8	15,1	28,4	41,9	56,4	10,2	23,7	9.12.42,36				43,16			9.13.12,29			B.
	α Hydræ.....	14,8	28,4	41,8	55,6	9,3	22,6	36,3	9.19.55,54				56,35	29,22		9.20.25,49			B.
	(f) Fortuna.....	...	...	41,8	54,8	8,3	22,4	35,6	9.43.54,89				55,70			9.44.24,87			B.
	Fortuna B.....	43,6	56,9	49,5	3,2	...	...	...	9.43.54,93				55,54			9.44.24,71			B.
	Regulus.....	...	38,8	52,4	6,4	20,2	33,8	...	10.0.6,31				7,11	29,20		10.0.36,30			B.
	(g) Lutetia B.....	33,1	46,6	41,2	55,3	...	...	...	10.13.45,71				46,24			10.14.15,44			B.
Feb. 8	Pollux.....	5,8	21,3	36,3	51,8	7,0	22,2	37,6	7.35.51,71				52,41	30,82	1,79				B.
	(h) ε Hydræ.....	...	4,3	17,4	31,3	...	...	...	8.38.31,23				32,07	31,20					B.
Feb. 9	Aldebaran.....	17,4	31,4	45,4	59,6	13,5	27,5	41,3	4.26.59,45				0,23	32,37	1,71	4.27.32,58			B.
	Procyon.....	26,3	39,6	52,7	6,6	20,2	33,6	47,2	7.31.6,60				7,44	32,68		7.31.40,01			B.
	Melpomene.....	43,3	57,2	10,9	24,8	38,4	51,9	6,0	8.19.24,64				25,44			8.19.58,06			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°, 327, -26°, 895, -13°, 656, -0°, 010, +13°, 633, +26°, 905, +40°, 349.

On the night of Feb. 4, Hardy was put forward 1<sup>m</sup>.

- (a) The clock-error given by this observation appears to be discordant. (b) This star was judged to be of an orange colour. (c) 'Not preceded by another.'
- (d) Faint and unsteady. (e) 'An object following.' (f) The times at the last four wires have each been diminished 1<sup>s</sup> conjecturally.
- (g) Very faint. (h) Thick cloud. A weight of three-sevenths has been given to the clock-error by this observation.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
Feb. 9	Hygeia .....	....	32,0	45,6	....	13,0	27,0	....	9.10.59,42	+4,0	+0,9	+2,4	0,22		1,71	9.11.32,91			B.
	Hygeia B. ....	47,8	1,6	55,0	8,7	....	....	....	9.10.59,92				0,52			9.11.33,21			B.
	B. (w.) ix. 234 B.	4,4	17,8	11,3	24,9	....	....	....	9.11.16,24				16,78			9.11.49,47			B.
	α Hydræ.....	11,2	25,2	38,3	52,3	5,5	19,3	32,7	9.19.52,07				52,88	32,70		9.20.25,58			B.
	(a) Fortuna B. ....	42,3	55,7	48,3	1,8	....	....	....	9.41.53,66				54,21			9.42.26,93			B.
	Regulus .....	21,5	35,3	49,1	3,0	16,7	30,6	44,2	10.0.2,91				3,71	32,63		10.0.36,45			B.
	(b) α Aquilæ.....	22,8	36,3	49,8	3,8	17,2	31,0	44,4	19.43.3,61				4,44	33,43		19.43.37,88			B.
Feb. 10	⊙ 2 L. ....	22,7	36,7	50,6	4,6	18,6	32,3	46,3	21.36.4,54				5,36			21.36.38,93			B.
Feb. 13	⊙ 1 L. ....	51,3	5,3	19,0	33,1	46,8	0,8	14,6	21.45.32,98		+0,8	+2,3	33,79		1,82	21.46.12,83			B.
	⊙ 2 L. ....	5,1	19,1	32,7	46,8	0,5	14,3	28,1	21.47.46,66				47,47			21.48.26,51			B.
	(c) Aldebaran .....	10,2	24,2	38,2	52,3	6,5	20,3	34,2	4.26.52,27				53,07	39,46		4.27.32,62			B.
	B. (w.) iv. 1361..	30,5	44,3	58,2	12,3	26,0	39,8	53,4	4.59.12,07				12,88			4.59.52,47			B.
	Rigel .....	10,3	23,8	37,3	51,0	4,7	18,2	31,8	5.6.51,01				51,81	39,67		5.7.31,41			B.
	β Tauri .....	37,8	53,1	8,2	23,7	39,0	54,3	9,5	5.16.23,65				24,34	39,55		5.17.3,95			B.
	H. C. 14228.....	53,3	7,3	21,1	35,0	49,0	2,8	16,5	7.10.35,00				35,81			7.11.15,57			B.
	* N.P.D. 103°.4'	....	31,1	44,7	58,8	12,5	26,0	....	7.15.58,61				59,42			7.16.39,18			B.
	* N.P.D. 102°.54'	28,2	41,8	55,8	9,8	23,6	37,2	51,0	7.19.9,63				10,44			7.19.50,21			B.
	* N.P.D. 102°.50'	11,4	25,2	38,8	53,0	6,8	20,6	34,3	7.21.52,87				53,68			7.22.33,45			B.
	B. (w.) vii. 770...	24,0	37,8	51,3	5,3	19,0	32,7	46,5	7.24.5,23				6,04			7.24.45,81			B.
	(d) Procyon .....	19,0	32,3	45,8	59,6	12,9	26,5	39,6	7.30.59,39				0,22	39,88		7.31.40,00			B.
	Pollux .....	56,8	12,3	27,4	43,2	57,8	13,3	28,6	7.35.42,77				43,46	39,75		7.36.23,25			B.
	(e) Melpomene .....	15,0	28,8	42,4	56,8	11,2	24,5	38,3	8.15.56,72				57,50			8.16.37,34			B.
	Melpomene B. ....	44,4	58,2	52,3	6,2	....	....	....	8.15.56,93				57,51			8.16.37,35			B.
	ε Hydræ.....	42,0	55,6	9,2	22,7	36,2	49,6	3,3	8.38.22,65				23,48	39,80		8.39.3,35			B.
	(f) Hygeia B. ....	25,3	38,5	32,2	45,7	....	....	....	9.7.37,07				37,60			9.8.17,50			B.
	α Hydræ.....	4,2	17,8	31,3	45,0	58,6	12,0	25,6	9.19.44,93				45,73	39,87		9.20.25,65			B.
	Regulus .....	14,3	28,0	41,7	55,5	9,3	22,8	36,7	9.59.55,47				56,26	40,11		10.0.36,23			B.
	α Aquilæ.....	15,3	29,2	42,6	56,6	10,1	23,8	37,2	19.42.56,40				57,22	40,73	1,85				B.
Feb. 14	⊙ 1 L. ....	43,7	57,3	11,2	25,3	39,7	53,2	7,2	21.49.25,37				26,18			21.50.7,07			B.
	⊙ 2 L. ....	57,8	11,3	25,2	39,2	53,2	6,6	20,6	21.51.39,13				39,94			21.52.20,84			B.
Feb. 16	⊙ 1 L. ....	27,6	41,5	55,1	9,0	22,8	36,8	50,3	21.57.9,02				9,83		1,86	21.57.54,34			B.
	⊙ 2 L. ....	40,8	54,4	8,2	22,0	36,0	49,6	3,5	21.59.22,07				22,88			22.0.7,40			B.
	(g) Polaris .....	....	6,5	....	....	....	8,0	56,5	1.4.36,63				45,10						B.
Feb. 17	δ Ursæ Min. SP.	....	59,5	46,0	30,8	20,5	4,5	....	6.18.32,41				28,81						B.
	Sirius .....	13,4	27,4	41,3	55,6	9,4	23,4	37,4	6.37.55,41				56,23	47,18					B.
	(h) B. (w.) vi. 1286...	42,8	56,8	10,7	24,8	38,6	52,3	6,0	6.41.24,57				25,38			6.42.12,43			B.
	Pollux .....	49,6	5,1	20,3	35,6	50,8	6,0	21,2	7.35.35,52				36,21	46,98					B.
Feb. 18	⊙ 1 L. ....	7,8	21,8	35,3	49,3	3,0	16,8	30,5	22.4.49,22				50,03		1,87	22.5.38,27			B.
	⊙ 2 L. ....	20,8	34,3	48,0	2,0	15,6	29,3	....	22.7.1,88				2,69			22.7.50,93			B.
	Rigel .....	1,0	14,6	28,3	41,7	55,4	9,3	22,6	5.6.41,84				42,64	48,77					B.
	α Orionis.....	46,2	59,5	12,7	26,5	40,2	53,6	7,2	5.46.26,56				27,38	48,87					B.
	(i) B. (w.) v. 1479..	2,5	....	....	44,0	....	....	....	5.56.44,02				44,83			5.57.33,69			B.
	B. (w.) v. 1479 B.	32,0	45,6	....	....	....	....	....	5.56.44,18				44,79			5.57.33,65			B.
Feb. 20	α Aquilæ.....	3,2	....	30,5	43,9	57,4	11,2	24,7	19.42.43,95	+3,8	+0,6	+2,3	44,74	53,35	1,89				T.
Feb. 21	⊙ 1 L. ....	33,7	47,4	1,2	15,1	28,4	42,3	56,0	22.16.14,87				15,65			22.17.9,26			T.
	(k) ⊙ 2 L. ....	46,0	59,6	12,9	26,8	40,6	54,2	8,2	22.18.26,90				27,68			22.19.21,29			T.
	Sirius .....	6,2	20,2	34,0	48,3	2,2	16,2	30,6	6.37.48,25				49,05	54,30					T.
	α Aquilæ.....	1,3	14,8	28,5	42,2	55,8	9,2	22,9	19.42.42,10				42,89	55,22	1,89				T.
Feb. 22	(l) ⊙ 1 L. ....	....	34,2	48,0	2,2	15,7	29,4	....	22.20.1,91				2,69			22.20.58,12			T.
	⊙ 2 L. ....	32,8	46,7	0,0	14,0	27,6	41,3	54,9	22.22.13,90				14,68			22.23.10,11			T.
	α Aquilæ.....	59,7	12,9	26,7	40,2	53,7	7,5	20,8	19.42.40,21				41,00	57,14	2,01	19.43.38,19			T.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,327, -26°,895, -13°,656, -0°,010, +13°,633, +26°,905, +40°,349.

(a) Very faint. (b) Grouped with the preceding clock-stars. (c) 'Thick mist.' (d) Blazing. (e) 'Good.' (f) Too faint to be observed at the wires: a very faint object following. (g) Cloud. (h) 'A heavy hail-storm after this.' (i) Very cloudy. (k) Limbs fringed and unsteady. The first three wires have been diminished 20", and the fourth 1". (l) Wire II taken hurriedly: all the wires have been diminished 1".



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Aimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Feb. 23	(a) ☉ 1 L.....	7,3	21,2	34,5	48,8	2,3	15,9	29,7	22.23.48,53	+3,8	+0,6	+2,3	49,31		2,01	22.24.46,73			T.
	☉ 2 L.....	19,2	32,7	46,7	0,3	13,9	27,7	41,3	22.26.0,25				1,03			22.26.58,45			T.
	Aldebaran .....	51,7	5,7	19,7	33,7	47,6	1,8	15,8	4.26.33,71				34,45	57,93		4.27.32,37			T.
	Rigel.....	51,7	5,4	18,7	32,6	46,3	59,7	13,3	5.6.32,53				33,31	58,02		5.7.31,29			T.
	β Tauri.....	19,2	34,7	49,7	5,2	20,7	35,7	50,8	5.16.5,14				5,80	57,93		5.17.3,79			T.
	Procyon.....	0,4	13,8	27,2	41,1	54,6	7,8	21,6	7.30.40,93				41,73	58,30		7.31.39,91			T.
	Pollux.....	38,7	53,8	8,9	24,6	39,7	54,8	10,2	7.35.24,38				25,04	58,11		7.36.23,23			T.
	α Hydræ.....	45,7	59,3	12,7	26,7	40,2	53,7	7,1	9.19.26,49				27,27	58,35		9.20.25,60			T.
	B. (w.) ix. 676..	59,2	12,8	26,2	39,9	53,8	6,9	20,8	9.29.39,95				40,74			9.30.39,09			T.
	H. C. 19005.....		58,7	12,4	27,2	41,3	55,4	9,7	9.32.27,03				27,75			9.33.26,10			T.
	B. (w.) ix. 816..	45,7	59,8	13,3	27,7	41,6	55,0	9,0	9.36.27,44				28,20			9.37.26,56			T.
	H. C. 19239.....	29,3	43,3	57,0	11,2	25,3	39,0	53,0	9.40.11,15				11,90			9.41.10,26			T.
	B. (w.) ix. 963..	48,8	2,7	16,0	29,8	43,7	57,0	10,7	9.43.29,82				30,61			9.44.28,98			T.
	B. (w.) ix. 1029.	11,3	24,8	38,7	52,5	5,9	19,7	33,1	9.46.52,28				53,07			9.47.51,44			T.
	(b) Lutetia B.....	52,2	5,3	1,3	15,2				9.58.5,17				5,73			9.59.4,12			T.
Feb. 24	Rigel.....	49,7	3,4	16,7	30,6	44,2	57,6	11,2	5.6.30,48				31,26	60,05	2,03	5.7.31,26			T.
	β Tauri.....	17,2	32,7	47,7	3,2	18,3	33,8	49,1	5.16.3,14				3,80	59,91		5.17.3,82			T.
	α Orionis.....	34,7	48,2	1,6	15,2	28,8	42,4	55,8	5.46.15,24				16,03	60,13		5.47.16,09			T.
	α Aquilæ.....	55,4	8,8	22,7	36,4	49,8	3,5	16,8	19.42.36,20				36,99	61,19	2,02	19.43.38,23			T.
Feb. 25	(c) ☉ 1 L.....	38,3				33,2			22.31.19,37				20,15			22.32.21,63			T.
	☉ 2 L.....	49,8	3,7	17,2	31,0	44,7	58,3	12,0	22.33.30,95				31,73			22.34.33,21			T.
	β Tauri.....	15,2	30,7	45,7	1,2	16,3	31,7	46,7	5.16.1,07				1,73	61,96		5.17.3,78			T.
	(d) δ Ursæ Min. SP.					7,5	51,0	39,0	6.18.19,11				16,15						T.
	(e) Sirius.....	58,2	12,2	26,0	40,2	54,2	8,2	22,3	6.37.40,18				40,98	62,33		6.38.43,14			T.
	ε Hydræ.....	19,5	33,1	46,6	0,2	13,6	27,3	40,7	8.38.0,14				0,94	62,32		8.39.3,27			T.
	Hygeia B.....	1,8	15,2		22,8				8.58.13,86				14,45			8.59.16,81			T.
	α Hydræ.....	41,7	55,3	8,7	22,6	36,1	49,7	3,1	9.19.22,45				23,23	62,38		9.20.25,62			T.
	(d) Fortuna B.....	8,7	22,4	15,6	29,2				9.26.20,62				21,21			9.27.23,61			T.
	Regulus.....	51,9	5,7	19,3	33,4	47,2	0,9	14,7	9.59.33,30				34,06	62,39		10.0.36,50			T.
Feb. 27	(f) ☉ 1 L.....	7,4	20,8	34,6	48,3	1,8	15,6	29,0	22.38.48,22		+0,4		48,99		2,00	22.39.54,49			B.
	☉ 2 L.....	18,6	32,0	45,6	59,4	13,0	26,4	40,0	22.40.59,29				0,06			22.42.5,56			B.
	(g) Polaris.....		47,0	17,5	11,5	55,0	40,5		1.4.9,96				17,07						B.
	α Hydræ.....	37,6	51,3	4,7	18,4	31,9	45,7	59,2	9.19.18,40				19,17	66,44					B.
	(h) Fortuna.....	54,7							9.24.36,95				37,70			9.25.44,10			B.
	Fortuna B.....	24,8	58,6	31,8	45,5				9.24.36,82				37,37			9.25.43,77			B.
Feb. 28	Regulus.....			15,6	29,4	43,1	56,8	10,6	9.59.29,32				30,07	66,39					B.
	(i) ☉ 1 L.....	51,1	4,8	18,2	31,7	45,2	59,0	12,6	22.42.31,80				32,57		2,00	22.43.40,08			B.
	α Andromedæ...	54,9	10,3	25,3	40,9	56,2	11,3	26,6	23.59.40,78				41,43	67,60		0.0.49,05			B.
	α Arietis.....	3,5	18,2	32,5	47,5	2,0	16,6	31,0	1.57.47,33				48,01	67,69		1.58.55,80			B.
	B. (w.) iv. 1361..	2,0	15,8	29,3	43,3	57,2	11,0	24,6	4.58.43,31				44,09			4.59.52,13			B.
	Rigel.....	41,6	55,2	8,5	22,3	35,7	49,6	3,2	5.6.22,30				23,07	68,17		5.7.31,12			B.
	B. (w.) vi. 990..	46,3	0,2	13,7	27,8	41,7	55,4	9,4	6.31.27,79				28,58			6.32.36,75			B.
	Sirius.....		6,3	20,3	34,2	48,3	2,3		6.37.34,27				35,06	68,19		6.38.43,23			B.
	B.A.C. 2221.....	21,3	35,2	49,1	3,0	16,8	30,7	44,6	6.39.2,96				3,75			6.40.11,93			B.
	* N.P.D. 104°. 4'	49,1	2,7	16,6	30,4	44,6	58,3	12,4	6.46.30,58				31,37			6.47.39,56			B.
	μ Canis Majoris..	35,2	48,8	2,8	16,6	30,6	44,2	58,1	6.48.16,62				17,41			6.49.25,60			B.
	B. (w.) vi. 1827..	29,2	42,9	56,7	10,8	24,8	38,5	52,0	6.57.10,70				11,49			6.58.19,69			B.
	B. (w.) vii. 22..	3,5	17,4	31,2	45,2	59,2	12,8	26,3	7.0.45,09				45,88			7.1.54,09			B.
	* N.P.D. 103°. 33'		5,3	18,7	32,8	46,6	0,3		7.7.32,73				33,52			7.8.41,74			B.
	* N.P.D. 103°. 25'		27,0	40,6	54,6	8,4	22,1		7.8.54,53				55,32			7.10.3,54			B.
	(h) B. (w.) vii. 451..	1,8		28,7	42,8		10,4	24,6	7.13.42,92				43,70			7.14.51,92			B.
	* N.P.D. 103°. 4'			2,3	16,2	30,3	44,1	57,8	7.15.30,13				30,91			7.16.39,14			B.
	* N.P.D. 102°. 54'	59,8	13,5	27,2	41,2	55,0	8,8	22,4	7.18.41,12				41,90			7.19.50,13			B.
	* N.P.D. 102°. 50'	43,0	56,7	10,3	24,5	38,2	51,8	5,7	7.21.24,31				25,09			7.22.33,33			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°, 327, - 26°, 895, - 13°, 656, - 0°, 010, + 13°, 633, + 26°, 905, + 40°, 349.

(a) Bad definition. The last three wires of 2 L have been diminished 1". (b) 'Extremely faint: no object very near this.' (c) Cloud. The limbs were ragged and very unsteady. (d) 'Good.' (e) Flaring and radiating. (f) Loud wind. The last three wires of 1 L have been diminished 1" for error in counting. (g) Unsteady: clouded at wire V. (h) Very faint. (i) Very unsteady: 2 L hid by cloud.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Feb. 28	B. (w.) VII. 770...	55,4	9,0	22,7	36,8	50,5	4,0	17,9	7.23.36,62	+3,8	+0,4	+2,3	37,40		2,00	7.24.45,64			B.
	Procyon.....	50,2	4,2	17,3	30,8	44,4	57,7	11,4	7.30.30,85				31,65	68,33		7.31.39,90			B.
	Pollux.....	28,4	43,6	58,8	14,3	29,6	44,8	0,3	7.35.14,26				14,91	68,19		7.36.23,16			B.
	Melpomene.....	....	....	....	....	47,6	....	....	8.6.33,52				34,25			8.7.42,55			B.
	Melpomene B....	....	....	....	....	....	....	....	8.6.34,00				34,53			8.7.42,83			B.
	Hygeia.....	28,6	42,6	56,2	10,0	23,8	37,8	51,8	8.56.10,11				10,86			8.57.19,23			B.
	Hygeia B.....	58,6	12,2	5,8	19,6	....	....	....	8.56.10,70				11,25			8.57.19,62			B.
	(a) Fortuna.....	....	20,2	....	....	....	....	....	9.23.47,75				48,50			9.24.56,91			B.
	Fortuna B.....	....	....	41,4	55,2	....	....	....	9.23.46,56				47,11			9.24.55,52			B.
	Regulus.....	45,8	59,8	13,3	27,5	41,2	54,9	8,8	9.59.27,33				28,08	68,38		10.0.36,53			B.
	(b) α Aquilæ.....	....	....	14,3	28,2	41,8	55,6	9,0	19.42.28,19				28,97	69,30		19.43.38,23			B.
Mar. 1	α Aquilæ.....	45,6	59,1	12,6	26,6	40,0	53,6	7,1	19.42.26,37				27,15	71,15	2,00	19.43.38,43			B.
Mar. 2	⊙ 1 L.....	16,4	30,2	43,4	57,3	10,9	24,6	37,8	22.49.57,23				58,01			22.51.9,55			B.
	⊙ 2 L.....	27,0	40,6	54,1	7,8	21,4	35,0	48,7	22.52.7,80				8,58			22.53.20,13			B.
	α Andromedæ...	50,8	6,2	21,1	36,7	51,9	7,3	22,4	23.59.36,63				37,28	71,74		0.0.48,92			B.
	α Orionis.....	22,6	36,2	49,4	3,2	16,7	30,3	43,9	5.46.3,18				3,96	72,11		5.47.16,08			B.
	B. (w.) v. 1479...	39,0	52,8	6,3	20,6	....	....	....	5.56.20,48				21,27			5.57.33,41			B.
	B. (w.) v. 1487..	1,0	15,0	28,6	42,8	56,5	10,2	24,2	5.56.42,61				43,40			5.57.55,54			B.
	B. (w.) v. 1500..	....	33,9	47,3	1,4	15,2	29,1	43,0	5.57.1,39				2,18			5.58.14,32			B.
	B. (w.) vi. 348...	2,6	16,6	30,0	44,2	....	....	....	6.10.44,18				44,97			6.11.57,13			B.
	* N.P.D. 104° 17'	....	7,6	21,8	36,3	50,2	4,2	....	6.11.36,01				36,80			6.12.48,96			B.
	B. (w.) vi. 428...	41,6	55,6	9,2	23,3	36,9	51,1	4,8	6.13.23,21				24,00			6.14.36,16			B.
	Sirius.....	48,2	2,2	15,8	30,0	44,2	58,1	12,0	6.37.30,07				30,86	72,36		6.38.43,05			B.
	B. (w.) vi. 1474...	12,1	25,9	39,7	53,8	7,8	21,6	35,2	6.46.53,73				54,52			6.48.6,73			B.
	H. C. 13848.....	....	1,2	15,0	29,2	43,0	56,8	....	6.59.29,03				29,82			7.0.42,04			B.
	B. (w.) vii. 22...	....	12,8	26,7	41,1	54,8	8,7	....	7.0.40,81				41,60			7.1.53,83			B.
	* N.P.D. 103° 25'	9,0	22,8	36,6	50,2	4,4	....	....	7.8.50,42				51,21			7.10.3,45			B.
	H. C. 14228.....	....	34,6	48,3	2,2	16,2	30,0	....	7.10.2,25				3,04			7.11.15,28			B.
	* N.P.D. 103° 21'	33,0	46,5	0,4	14,6	28,3	42,0	56,0	7.13.14,40				15,19			7.14.27,43			B.
	* N.P.D. 102° 40'	....	58,8	12,7	26,8	40,6	54,2	....	7.20.26,61				27,39			7.21.39,61			B.
	(c) * N.P.D. 102° 29'	0,2	13,8	27,5	41,0	55,6	9,3	23,1	7.22.41,50				42,28			7.23.54,54			B.
	Procyon.....	46,4	0,2	13,3	26,7	40,4	53,8	7,4	7.30.26,89				27,69	72,27		7.31.39,96			B.
	Pollux.....	24,6	39,8	54,8	10,4	25,7	41,0	56,0	7.35.10,32				10,97	72,11		7.36.23,24			B.
	Hygeia.....	10,9	24,2	38,7	53,1	6,6	20,8	34,3	8.54.52,66				53,40			8.56.5,79			B.
	Hygeia B.....	40,8	54,2	48,6	2,1	....	....	....	8.54.53,08				53,62			8.56.6,01			B.
Mar. 3	⊙ 1 L.....	58,6	12,1	25,6	39,2	52,8	6,6	19,8	22.53.39,25			+2,5	40,04		2,01	22.54.53,59			B.
	⊙ 2 L.....	9,0	22,6	36,1	49,8	3,2	17,0	30,4	22.55.49,73				50,52			22.57.4,07			B.
	(d) α Andromedæ...	48,9	4,0	19,2	35,0	50,1	5,3	20,4	23.59.34,70				35,35	73,67		0.0.48,99			B.
	(e) Aldebaran.....	35,6	49,6	3,3	17,6	31,7	45,6	59,6	4.26.17,57				18,31			4.27.32,32			B.
	H. C. 10891.....	....	42,2	56,6	11,3	25,7	40,3	....	5.37.11,22				11,91			5.38.26,02			B.
	H. C. 11041.....	3,2	17,3	31,2	45,7	59,8	13,9	28,0	5.40.45,59				46,32			5.42.0,44			B.
	H. C. 11106.....	....	54,1	7,9	22,1	36,1	50,2	....	5.43.22,08				22,82			5.44.36,94			B.
	α Orionis.....	20,5	34,0	47,6	1,3	14,8	28,3	41,7	5.46.1,17				1,96	74,09		5.47.16,08			B.
	H. C. 11252.....	....	6,0	20,8	35,9	50,8	5,7	20,6	5.48.35,83				36,50			5.49.50,63			B.
	H. C. 11384.....	14,9	28,9	42,9	57,0	11,2	25,1	39,2	5.51.57,03				57,76			5.53.11,89			B.
	B. (w.) v. 1479...	37,0	51,0	5,1	....	32,5	....	....	5.56.18,74				19,54			5.57.33,68			B.
	B. (w.) v. 1487..	59,1	13,0	27,0	40,6	54,2	8,2	22,2	5.56.40,61				41,41			5.57.55,55			B.
	B. (w.) v. 1500..	....	....	....	59,6	13,2	27,2	40,8	5.56.59,37				0,17			5.58.14,31			B.
	H. C. 11934.....	36,7	51,0	5,0	19,5	33,7	47,7	2,0	6.7.19,38				20,10			6.8.34,26			B.
	B. (w.) vi. 348..	0,5	14,3	27,8	42,3	56,1	....	....	6.10.42,07				42,87			6.11.57,03			B.
	* N.P.D. 104° 17'	....	....	19,9	33,8	48,3	....	15,6	6.11.34,00				34,80			6.12.48,96			B.
	B. (w.) vi. 428...	39,6	53,4	7,3	21,3	35,1	48,8	3,0	6.13.21,21				22,01			6.14.36,17			B.
	H. C. 12650.....	28,8	42,8	56,8	11,5	25,8	39,8	54,0	6.27.11,35				12,07			6.28.26,25			B.
	H. C. 12815.....	6,6	21,2	35,3	50,0	4,3	18,8	33,1	6.31.49,90				50,60			6.33.4,79			B.
	H. C. 12939.....	25,3	40,8	55,7	11,0	26,3	41,6	56,7	6.35.11,05				11,70			6.36.25,89			B.
	Sirius.....	46,2	0,0	14,0	28,2	42,3	56,2	10,3	6.37.28,18				28,99	74,21		6.38.43,19			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,327, -26°,895, -13°,656, -0°,010, +13°,633, +26°,905, +40°,349.

(a) 'Too faint.'

(b) Grouped with the preceding clock-stars.

(c) Very faint.

(d) Blazing.

(e) Very steady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Aimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Mar. 3	H. C. 13102.....	22,0	36,0	50,1	4,4	18,6	32,6	46,9	6. 40. 4,37	+3,8	+0,4	+2,5	5,10		2,01	6. 41. 19,30			B.
	H. C. 13194.....		9,0	23,9	39,0	53,9	9,0		6. 42. 38,95				39,61			6. 43. 53,81			B.
	* N.P.D. 104°. 4'	43,2	57,2	11,1	24,8	38,8	52,4	6,3	6. 46. 24,83				25,63			6. 47. 39,84			B.
	H. C. 13457.....	17,7	32,0	46,2	0,7	15,6	30,0	44,2	6. 49. 0,91				1,61			6. 50. 15,82			B.
	H. C. 13526.....	33,1	48,1	3,1	18,2	33,3	48,1	3,3	6. 51. 18,17				18,83			6. 52. 33,05			B.
	H. C. 13611.....	55,1	9,6	24,0	38,6	53,1	7,4	21,9	6. 53. 38,53				39,23			6. 54. 53,45			B.
	B.A.C. 2323.....	51,3	5,7	19,7	33,9	47,9	2,1	16,0	6. 56. 33,80				34,53			6. 57. 48,75			B.
	H. C. 13848.....	45,6	59,3	12,9	26,8	41,0	54,7	8,6	6. 59. 26,99				27,79			7. 0. 42,02			B.
	* N.P.D. 103°. 33'	45,2	59,1	12,8	26,7	40,7	54,3	8,2	7. 7. 26,72				27,52			7. 8. 41,76			B.
	H. C. 14228.....	18,8	32,6	46,3	0,3	14,2	27,9	41,8	7. 10. 0,27				1,07			7. 11. 15,31			B.
	(a) * N.P.D. 103°. 21'	30,8	44,6	58,3	12,6	26,3	40,1	54,0	7. 13. 12,38				13,18			7. 14. 27,43			B.
	* N.P.D. 103°. 4'	42,8	56,4	10,0	24,2	38,1	51,7	5,6	7. 15. 24,11				24,91			7. 16. 39,16			B.
	* N.P.D. 102°. 40'		57,1	10,8	24,6	38,6	52,1		7. 20. 24,63				25,43			7. 21. 39,69			B.
	(b) * N.P.D. 102°. 28'		12,3	25,7	39,7	53,6	6,8		7. 22. 39,61				40,41			7. 23. 54,67			B.
	Procyon.....	44,2	58,2	11,3	25,0	38,4	51,8	5,4	7. 30. 24,90				25,70	74,25		7. 31. 39,97			B.
	Pollux.....	22,3	37,6	52,8	8,3	23,5	38,6	53,9	7. 35. 8,15				8,80	74,27		7. 36. 23,08			B.
	(c) Hygeia B.....	4,1	17,9	11,7	25,7				8. 54. 16,50				16,99			8. 55. 31,38			B.
	(d) Fortuna B.....	10,8	24,2	17,0	31,1				9. 21. 22,42				22,92			9. 22. 37,35			B.
	Regulus.....	39,7	53,7	7,3	21,2	34,8	48,6	2,7	9. 59. 21,14				21,90	74,57		10. 0. 36,38			B.
Mar. 4	B. (w.) VI. 428...	37,7	51,3	5,2	19,2	33,1	46,8	0,8	6. 13. 19,16				19,96		1,97	6. 14. 36,14			B.
	Sirius.....	44,2	57,8	11,8	26,2	40,2	54,2	8,2	6. 37. 26,09				26,90	76,28		6. 38. 43,12			B.
	B. (w.) VI. 1474..	8,4	22,0	35,7	49,7	3,7	17,3	31,2	6. 46. 49,72				50,52			6. 48. 6,75			B.
	B. (w.) VII. 22...	55,6	9,0	23,0	37,2	50,8	4,7	18,3	7. 0. 36,94				37,74			7. 1. 53,99			B.
	H. C. 13997.....	32,5	46,5	0,9	15,0	29,6	43,8	58,1	7. 4. 15,20				15,91			7. 5. 32,16			B.
	H. C. 14075.....		8,6	23,1	38,2	53,0	7,8		7. 6. 38,13				38,80			7. 7. 55,06			B.
	* N.P.D. 103°. 30'	21,8	35,6	49,2	3,3	17,2	30,8	44,6	7. 10. 3,21				4,01			7. 11. 20,27			B.
	B. (w.) VII. 451..	53,2	7,0	20,5	34,4	48,7	2,3	15,8	7. 13. 34,56				35,36			7. 14. 51,62			B.
	* N.P.D. 102°. 50'	34,9	48,7	2,2	16,2	30,0	43,8	57,3	7. 21. 16,16				16,96			7. 22. 33,24			B.
	Castor.....	12,6	28,6	44,2	0,4	16,3	32,0	48,1	7. 24. 0,31				0,95	76,22		7. 25. 17,23			B.
	H. C. 14814.....		57,6	11,1	25,8	39,6	53,9		7. 27. 25,59				26,32			7. 28. 42,60			B.
	(e) Procyon.....	42,2	55,8	9,2	23,2	36,3	50,0	3,3	7. 30. 22,86				23,66	76,27		7. 31. 39,95			B.
Mar. 6	(f) ☉ 1 L.....	1,7	15,3	28,8	42,3	56,0	9,6	23,0	23. 4. 42,38				43,17		1,91	23. 6. 2,53			B.
	☉ 2 L.....	11,8	25,6	39,0	52,6	6,2	19,6	33,2	23. 6. 52,57				53,36			23. 8. 12,72			B.
	(g) Polaris.....		22,5		57,0	41,0		12,0	1. 3. 53,50				0,30						B.
	Aldebaran.....	29,6	43,7	57,4	11,7	25,8	39,8	53,8	4. 26. 11,68				12,42	79,78		4. 27. 32,21			B.
	α Orionis.....	14,6	28,0	41,6	55,3	9,1	22,4	35,8	5. 45. 55,26				56,05	79,95		5. 47. 15,94			B.
	B. (w.) v. 1487..	53,1	7,0	20,6	34,8	48,6	2,3	16,0	5. 56. 34,63				35,43			5. 57. 55,34			B.
	B. (w.) VI. 348..		8,6	22,1	36,3	50,2	4,4		6. 10. 36,31				37,11			6. 11. 57,03			B.
	Melpomene B...	26,8	41,2	35,7	50,0				8. 4. 40,10				40,58			8. 6. 0,65			B.
	B. (w.) VIII. 1308	39,4	53,4	7,1	21,3	35,2	49,2	2,8	8. 49. 21,20				21,95			8. 50. 42,08			B.
	Hygeia.....		4,2	17,8	31,4	45,3	59,4		8. 52. 31,61				32,36			8. 53. 52,50			B.
	B. (w.) VIII. 1456	8,8	22,6	36,3	50,1	3,5	17,6	31,3	8. 55. 50,02				50,79			8. 57. 10,93			B.
	(h) B. (w.) VIII. 1519	1,3	15,4	29,1	43,2	57,1	11,0	25,0	8. 58. 43,16				43,91			9. 0. 4,06			B.
	H. C. 18070.....		32,8	47,0	1,3	15,3	29,3		9. 1. 1,13				1,87			9. 2. 22,02			B.
	H. C. 18141.....	29,1	43,2	57,2	11,4	25,6	39,6	53,3	9. 3. 11,34				12,07			9. 4. 32,22			B.
	B. (w.) IX. 127...		57,4	11,1	24,9	38,7	52,3		9. 5. 24,87				25,64			9. 6. 45,80			B.
	B. (w.) IX. 191...	46,4	0,4	14,1	28,3	42,0	55,8	10,0	9. 8. 28,15				28,90			9. 9. 49,06			B.
	H. C. 18382.....		24,9	39,1	53,6	8,0	22,3		9. 10. 53,57				54,27			9. 12. 14,43			B.
	H. C. 18457.....	39,0	52,8	6,8	21,0	35,0	49,1	2,9	9. 13. 20,94				21,68			9. 14. 41,85			B.
	Regulus.....	34,3	48,1	1,6	15,5	29,2	43,2	56,8	9. 59. 15,53				16,29	80,18		10. 0. 36,52			B.
	Massilia.....			29,9	43,1	56,3	10,0	23,3	11. 56. 43,08				43,88			11. 58. 4,26			B.
Mar. 9	☉ 1 L.....	9,8	14,6	27,9	41,6	55,2	8,5	22,1	23. 15. 41,38				42,15		1,86	23. 17. 7,42			B.
	☉ 2 L.....	10,6	24,2	37,6	51,3	4,7	18,3	32,0	23. 17. 51,24				52,01			23. 19. 17,29			B.
	Polaris.....			56,0	47,5		17,5	2,0	1. 3. 45,13				51,09						B.
	(i) Aldebaran.....	23,7	37,9	51,8	6,0	19,7	33,9	47,8	4. 26. 5,83				6,55	85,60		4. 27. 32,23			B.
	Rigel.....	23,8	37,3	50,9	4,6	18,0	31,8	45,2	5. 6. 4,51				5,28	85,80		5. 7. 31,01			B.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°, 327, - 26°, 895, - 13°, 656, - 0°, 010, + 13°, 633, + 26°, 905, + 40°, 349.

(a) Very faint.  
(e) 'Cloudy afterwards.'

(b) 'Extremely faint.'  
(f) Bad definition.

(c) Too faint to be taken at the wires on account of mist.  
(g) Great motion.

(h) 'The star seemed double.'

(d) Too faint for the wires.  
(i) Misty.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
Mar. 9	$\beta$ Tauri..... Castor .....	51,1 2,9	6,5 18,9	21,8 34,5	37,1 50,6	52,6 6,6	7,8 22,2	23,1 38,1	5.15.37,15 7.23.50,54	+3,8	0,0	+2,5	37,77 51,15	85,70 85,94	1,86	5.17.35,1 7.25.17,06	B. B.		
Mar. 10	(a) $\beta$ Leonis.....	27,1	41,1	54,7	8,8	22,8	....	....	11.40.8,84				9,57	88,16	1,78		B.		
Mar. 11	Regulus .....	24,6	38,3	52,3	6,2	19,8	33,7	47,3	9.59.6,03				6,77	89,70	1,81		B.		
	$\beta$ Leonis.....	25,3	39,2	53,2	7,3	21,2	35,0	48,9	11.40.7,16				7,89	89,75			B.		
	(b) Bellona .....	....	....	....	....	....	38,2	52,0	11.57.11,13				11,90			11.58.41,71	B.		
	Bellona B.....	....	....	5,8	19,3	....	5,8	19,3	11.57.11,68				12,25			11.58.42,06	B.		
Mar. 12	Regulus.....	22,8	36,5	50,2	4,3	17,8	31,6	45,4	9.59.4,09				4,83	91,64	1,92		B.		
	$\delta$ Leonis .....	5,8	20,2	34,7	49,2	3,6	18,2	32,5	11.4.49,18				49,85	91,55			B.		
Mar. 13	$\odot$ 1 L.....	35,6	49,1	2,4	16,2	29,6	43,1	56,6	23.30.16,09				16,87		1,92	23.31.49,54	B.		
	$\odot$ 2 L.....	45,0	58,4	11,8	25,6	39,2	52,4	6,0	23.32.25,49				26,27			23.33.58,95	B.		
	Sirius.....	26,7	40,8	54,7	8,8	22,7	37,0	51,3	6.37.8,86				9,66	93,36		6.38.42,90	B.		
	Castor.....	55,4	11,3	27,1	43,1	59,3	15,1	30,9	7.23.43,17				43,78	93,25		7.25.17,08	B.		
	Procyon.....	25,2	38,7	52,0	5,7	19,4	32,7	46,2	7.30.5,70				6,49	93,32		7.31.39,80	B.		
	Pollux.....	3,3	18,4	33,6	49,2	4,4	19,8	34,8	7.34.49,07				49,69	93,23		7.36.23,01	B.		
	$\delta$ Leonis .....	3,7	18,1	32,3	47,3	2,0	16,2	30,4	11.4.47,15				47,82	93,58		11.6.21,42	B.		
	(c) Bellona B. ....	28,5	42,3	33,2	47,1	....	....	....	11.55.39,40				39,90			11.57.13,57	B.		
Mar. 15	Sirius.....	23,3	36,8	50,8	5,3	19,3	33,2	47,3	6.37.5,14				5,94	97,05	1,75	6.38.42,93	B.		
	H. C. 13758.....	33,3	47,4	1,3	15,4	29,5	43,3	57,3	6.57.15,36				16,08			6.58.53,09	B.		
	H. C. 13889.....	25,0	39,3	53,6	8,0	22,3	36,8	51,0	7.1.8,00				8,68			7.2.45,70	B.		
	H. C. 13997.....	11,3	25,7	40,0	54,3	8,7	23,0	37,3	7.3.54,33				54,98			7.5.32,00	B.		
	H. C. 14113.....	26,8	40,9	54,9	9,0	22,9	37,0	51,0	7.7.8,93				9,65			7.8.46,67	B.		
	* N.P.D. 103°.30'	1,2	14,9	28,4	42,6	56,3	10,0	23,8	7.9.42,46				43,25			7.11.20,27	B.		
	Procyon.....	21,4	35,0	48,3	2,0	15,5	29,2	42,2	7.30.1,94				2,73	97,05		7.31.39,78	B.		
	Pollux.....	59,4	14,6	29,8	45,4	0,7	15,8	31,2	7.34.45,27				45,89	97,00		7.36.22,95	B.		
Mar. 16	(d) Melpomene B....	45,0	59,2	54,2	8,6	....	....	....	8.3.58,43				58,87		1,76	8.5.37,64	B.		
	Hygeia.....	26,8	....	52,8	6,8	21,3	35,2	....	8.48.7,36				8,09			8.49.46,92	B.		
	Hygeia B.....	....	....	2,8	16,6	....	....	....	8.48.7,48				8,01			8.49.46,84	B.		
	H. C. 17850.....	54,1	8,2	22,2	36,8	51,2	5,4	19,6	8.53.36,79				37,47			8.55.16,30	B.		
	H. C. 17932.....	43,6	57,8	11,7	25,8	39,8	53,9	7,8	8.56.25,77				26,48			8.58.5,32	B.		
	H. C. 18050.....	20,7	34,9	48,8	3,0	17,0	30,8	44,7	9.0.2,84				3,56			9.1.42,40	B.		
	$\pi^1$ Cancri.....	57,3	11,3	25,2	39,3	53,2	7,1	21,2	9.2.30,23				39,96			9.4.18,81	B.		
	H. C. 18320.....	....	56,2	10,7	25,2	39,4	53,1	....	9.8.24,91				25,59			9.10.4,44	B.		
	H. C. 18414.....	57,2	11,3	25,5	39,7	53,8	7,8	22,0	9.11.39,62				40,32			9.13.19,18	B.		
	H. C. 18508.....	59,9	14,2	28,2	42,6	57,0	11,2	25,2	9.14.42,61				43,30			9.16.22,16	B.		
	(e) $\alpha$ Hydræ.....	5,2	18,8	32,3	46,1	59,6	13,3	26,4	9.18.45,96				46,73	98,80		9.20.25,59	B.		
	$\delta$ Leonis.....	58,4	13,0	27,1	41,8	56,2	10,7	25,2	11.4.41,77				42,44	98,97		11.6.21,43	B.		
	(f) Eunomia B.....	50,4	4,3	58,2	12,3	....	....	....	11.32.2,95				3,48			11.33.42,51	B.		
	$\beta$ Leonis.....	15,9	29,7	43,8	58,2	12,0	25,7	39,7	11.39.57,86				58,59	99,08		11.41.37,63	B.		
	Massilia.....	....	55,8	8,7	22,3	35,8	49,2	....	11.47.22,35				23,13			11.49.2,18	B.		
	Bellona.....	37,7	51,4	5,3	18,9	32,4	46,2	59,4	11.53.18,76				19,53			11.54.58,58	B.		
	Amphitrite.....	....	....	....	31,3	....	59,2	12,8	13.6.31,68				32,46			13.8.11,60	B.		
	Amphitrite B....	21,3	34,2	26,2	40,2	....	....	....	13.6.32,10				32,68			13.8.11,82	B.		
	Spica.....	10,2	24,0	37,4	51,3	5,2	18,6	32,3	13.15.51,28				52,06	99,19		13.17.31,22	B.		
	Spica B.....	40,3	53,7	45,8	59,3	....	....	....	13.15.51,41								B.		
Mar. 17	(g) $\odot$ 1 L.....	5,5	19,0	32,4	46,0	59,4	13,0	26,3	23.44.45,94				46,72		1,83	23.46.26,68	B.		
	$\odot$ 2 L.....	14,7	28,2	41,3	55,0	8,6	22,1	35,6	23.46.55,07				55,85			23.48.35,82	B.		
	Castor.....	48,2	4,2	19,8	35,9	51,8	7,6	23,4	7.23.35,84				36,45	100,51		7.25.17,00	B.		
	Procyon.....	17,8	31,2	44,4	58,3	11,8	25,3	38,8	7.29.58,23				59,02	100,73		7.31.39,57	B.		
	Pollux.....	55,7	11,2	26,3	41,8	57,2	12,3	27,3	7.34.41,68				42,30	100,55		7.36.22,86	B.		
	Melpomene B....	50,8	5,1	0,6	14,4	....	....	....	8.4.4,41				4,85			8.5.45,45	B.		
	Hygeia.....	....	20,3	34,3	48,0	2,0	15,7	....	8.47.48,05				48,78			8.49.29,43	B.		

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,327$ ,  $-26^s,895$ ,  $-13^s,656$ ,  $-0^s,010$ ,  $+13^s,633$ ,  $+26^s,905$ ,  $+40^s,349$ .

(a) Cloud. (b) Not seen at first on account of fog. (c) Very faint and diffused, the sky being hazy: it could only be observed at the Bars.  
 (d) Another object preceded about 10". (e) After this clouds came over. (f) 'Another object following 45' and of about 10' greater N.P.D.'  
 (g) Very great motion.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Mar. 17	$\alpha$ Hydræ.....	3,3	16,8	30,3	44,2	57,6	11,0	24,7	9. 18. 43,99	+3,8	0,0	+2,5	44,76		1,83	9. 20. 25,45			B.
	B. (w.) ix. 493...	48,9	2,6	16,2	30,2	43,8	57,4	11,0	9. 21. 30,01				30,77			9. 23. 11,47			B.
	B. (w.) ix. 564...	28,3	41,9	55,3	9,4	23,2	36,8	50,6	9. 24. 9,36				10,11			9. 25. 50,81			B.
	H. C. 18883.....	42,0	56,2	10,0	24,3	38,3	52,3	6,4	9. 27. 24,21				24,92			9. 29. 5,62			B.
	B. (w.) ix. 709...	46,5	0,2	13,7	27,8	41,3	55,2	8,7	9. 30. 27,63				28,38			9. 32. 9,09			B.
	$\psi$ Leonis.....	24,2	38,2	52,0	6,2	19,9	33,9	47,7	9. 34. 6,01				6,74			9. 35. 47,45			B.
	18 Leonis.....	9,1	23,0	36,8	50,6	4,3	18,3	31,8	9. 36. 50,55				51,30			9. 38. 32,02			B.
	H. C. 19239.....	47,0	1,0	14,8	29,0	43,0	56,9	10,7	9. 39. 28,92				29,65			9. 41. 10,37			B.
	B. (w.) ix. 963...	6,6	20,2	33,7	47,3	1,0	14,6	28,2	9. 42. 47,37				48,14			9. 44. 28,86			B.
	B. (w.) ix. 1017...	49,8	3,3	16,9	30,6	44,2	57,6	11,2	9. 45. 30,51				31,23			9. 47. 12,01			B.
	$\nu$ Leonis.....	59,8	13,8	27,4	41,4	55,2	9,1	22,8	9. 48. 41,35				42,09			9. 50. 22,82			B.
	(a) Regulus.....	13,7	27,7	41,3	55,2	8,7	22,7	36,3	9. 58. 55,09				55,83	100,61		10. 0. 36,57			B.
	(a) $\delta$ Leonis.....	56,7	11,3	25,3	40,2	54,4	8,8	23,3	11. 4. 40,00				40,67	100,74		11. 6. 21,50			B.
	Eunomia.....			53,1	7,3	21,4	34,9	49,2	11. 31. 7,32				8,11			11. 32. 48,97			B.
	(b) Massilia.....	45,2	58,8	12,1	25,7	39,6	52,6	6,1	11. 46. 25,73				26,51			11. 48. 7,39			B.
Mar. 23	$\alpha$ Orionis.....	43,2	56,7	10,2	24,0	37,7	51,0	4,6	5. 47. 23,91		-0,6	+1,3	24,60		1,78	5. 47. 15,71			T.
	$\alpha$ Orionis B.....	13,7	26,7	18,2	31,7				5. 47. 24,19				24,64			5. 47. 15,75			T.
	Procyon.....	7,3	20,7	34,2	47,8	1,2	14,7	28,3	7. 31. 47,75				48,45			7. 31. 39,69			T.
	Procyon B.....	37,7	50,8	41,8	55,2				7. 31. 47,99				48,45			7. 31. 39,69			T.
	Pollux.....	45,2	0,6	15,7	31,0	46,3	1,7	16,9	7. 36. 31,05				31,60			7. 36. 22,84			T.
	(c) Melpomene.....	31,2	45,4	59,7		28,0	42,0	56,1	8. 7. 13,74				14,36			8. 7. 5,64			T.
	Melpomene B.....		14,2	10,2	24,3				8. 7. 13,94				14,44			8. 7. 5,72			T.
	(d) Hygeia.....	40,3	54,0	7,8	21,8	35,8	50,2		8. 48. 21,93				22,57			8. 48. 13,90			T.
	Hygeia B.....	9,7	23,3	17,4	31,2				8. 48. 22,05				22,57			8. 48. 13,90			T.
	(e) Fortuna.....		40,2	54,0	8,3	22,0	36,0	49,4	9. 13. 8,05				8,70			9. 13. 0,06			T.
	Fortuna B.....	55,8	9,3	3,2	16,9				9. 13. 7,95				8,48			9. 12. 59,84			T.
	$\delta$ Leonis.....	46,0	0,5	14,7	29,4	43,8	58,3	12,7	11. 6. 29,35				29,94			11. 6. 21,44			T.
	$\delta$ Leonis B.....	14,6	28,6	27,1	41,3				11. 6. 29,62				29,97			11. 6. 21,47			T.
	(f) Eunomia.....	56,2	10,8	24,2	38,2	52,0		19,6	11. 27. 38,11				38,80			11. 27. 30,33			T.
	Eunomia B.....	26,2	40,0	33,4	47,1				11. 27. 38,33				38,90			11. 27. 30,43			T.
	$\nu$ Virginis.....	49,6	3,1	16,3	30,1	43,7	57,2	10,7	11. 38. 30,10				30,79			11. 38. 22,33			T.
	Massilia.....	8,1	21,6	34,8	48,3	1,9	15,3	28,8	11. 42. 48,40				49,09			11. 42. 40,64			T.
	Massilia B.....	38,7	51,8	42,2	55,3				11. 42. 48,60				49,17			11. 42. 40,72			T.
	(d) Bellona.....	11,4	24,9	38,8	52,4	6,2	19,8	33,2	11. 49. 52,38				53,06			11. 49. 44,62			T.
	Bellona B.....	41,5	54,5	47,1	0,3				11. 49. 52,48				53,04			11. 49. 44,60			T.
	H. C. 22688.....	44,7	58,3	11,8	25,7	38,9	52,2	5,8	11. 57. 25,34				26,03			11. 57. 17,60			T.
	B. (w.) xi. 1040...	54,3	7,8	21,2	34,8	48,1	1,7	15,1	12. 1. 34,71				35,40			12. 1. 26,97			T.
	B.A.C. 4104.....	40,4	54,0	7,4	21,0	34,7	48,0	1,6	12. 4. 21,01				21,71			12. 4. 13,29			T.
	(g) Calliope B.....	28,4	42,2						12. 10. 42,60				43,03			12. 10. 34,61			T.
	(h) $\beta$ Corvi.....	8,4	23,1	37,5	52,3	6,7	21,2	35,9	12. 26. 52,15				52,90			12. 26. 44,50			T.
	Polaris SP.....	11,3	56,0	40,0	25,5	18,0	57,0	48,0	13. 5. 27,97				21,47						T.
	(i) Amphitrite.....	49,2		16,2	29,7	43,0	57,0	10,3	13. 2. 29,69				30,57			13. 2. 22,02			T.
	Amphitrite B....	19,2	32,4	24,7	38,1				13. 2. 30,22				30,78			13. 2. 22,43			T.
	Spica.....	58,0	11,7	25,2	39,1	52,7	6,3	19,8	13. 17. 38,97				39,66			13. 17. 31,33			T.
	Spica B.....	28,2	41,3	33,7	47,2				13. 17. 39,23				39,68			13. 17. 31,35			T.
Mar. 24	Procyon.....	5,6	18,8	32,5	46,0	59,4	13,0	26,7	7. 31. 46,00				46,70		1,78	7. 31. 39,71			T.
	Procyon B.....	35,8	48,9				40,2	53,3	7. 31. 46,16				46,62			7. 31. 39,63			T.
	Pollux.....	43,4	58,8	13,8	29,4	44,7	59,8	15,0	7. 36. 29,27				29,82			7. 36. 22,83			T.
	(k) Melpomene.....	48,3	2,2	16,3			59,3	13,3	8. 7. 30,74				31,36			8. 7. 24,41			T.
	Melpomene B....	17,6	31,5	27,8	41,5				8. 7. 31,28				31,78			8. 7. 24,83			T.
	(l) Hygeia.....	30,7	44,4	58,2	12,1	26,2			8. 48. 12,20				12,84			8. 48. 5,94			T.
	Hygeia B.....				21,7				8. 48. 12,54				13,06			8. 48. 6,16			T.
	$\alpha$ Hydræ.....	50,7	4,7	17,9	31,7	45,2	58,8	12,4	9. 20. 31,63				32,31			9. 20. 25,45			T.
	$\alpha$ Hydræ B.....	21,2	34,3				26,0	39,4	9. 20. 31,85				32,29			9. 20. 25,43			T.
	$\delta$ Leonis.....	44,3	58,8	12,9	27,7	41,9	56,3	10,8	11. 6. 27,53				28,12			11. 6. 21,39			T.
	$\delta$ Leonis B.....	12,7	26,7	25,2	39,7				11. 6. 27,80				28,15			11. 6. 21,42			T.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,327$ ,  $-26^s,895$ ,  $-13^s,656$ ,  $-0^s,010$ ,  $+13^s,633$ ,  $+26^s,905$ ,  $+40^s,349$ .  
 March 19, 21<sup>h</sup>, Hardy was put forward 2<sup>m</sup>.

(a) Blazing. (b) On March 17 and 18 classes of Students came into the Transit Room, and on the latter day the Transit was twice reversed to exhibit to them the process. (c) 'The preceding of three small stars nearly in a line: Mag. 10.11.' The observation was considered good. (d) 'Good: no object near this.' (e) The observations were satisfactory: the Planet was of Mag. 10.11. (f) 'Pretty good: no near objects following.' (g) 'Two following objects were also observed.' (h) Of no definition. (i) Extremely faint. A star of Mag. 8.9 preceded about 9<sup>m</sup>. (k) 'Good.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		1	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Mar. 24	(a) Eunomia .....	....	....	30,8	44,8	58,6	12,3	26,1	11. 26. 44,69	+3,8	-0,6	+1,3	45,38		1,78	11. 26. 38,68	T.		
	Eunomia B. ....	....	....	40,1	53,7	....	....	....	11. 26. 44,97				45,54			11. 26. 38,84	T.		
	(b) $\beta$ Leonis .....	3,3	16,8	30,2	43,8	57,2	10,7	24,2	11. 41. 43,74				44,38	-6,67		11. 41. 37,70	T.		
	$\beta$ Leonis B. ....	34,0	47,0	37,4	50,8	....	....	....	11. 41. 43,96				44,36			11. 41. 37,68	T.		
	B. (w.) XI. 788... ..	25,9	39,3	52,7	6,4	20,0	33,3	46,7	11. 46. 6,33				7,02			11. 46. 0,34	T.		
	Bellona .....	25,3	....	52,8	....	....	34,3	47,9	11. 49. 6,70				7,38			11. 49. 0,71	T.		
	(a) Bellona B. ....	55,7	9,2	....	15,2	....	....	....	11. 49. 7,01				7,57			11. 49. 0,90	T.		
	B. (w.) XII. 45... ..	19,6	33,0	....	....	....	....	....	12. 3. 59,84				0,53			12. 3. 53,88	T.		
	(c) B. (w.) XII. 45 B. ..	50,1	3,2	53,7	7,1	....	....	....	12. 4. 0,13				0,70			12. 3. 54,05	T.		
	(d) $\beta$ Corvi. ....	6,7	21,3	35,8	50,4	5,1	19,3	34,0	12. 26. 50,37				51,12	-6,51		12. 26. 44,49	T.		
Mar. 27	Pollux .....	37,9	53,2	8,2	23,7	39,0	54,3	9,7	7. 36. 23,71			+1,4	24,26	-1,58	1,98		T.		
	(e) Melpomene B. ....	18,3	32,7	28,7	42,7	....	....	....	8. 8. 32,28				32,73			8. 8. 31,15	T.		
	Hygeia .....	10,2	24,3	38,1	....	6,0	20,0	33,5	8. 47. 52,03				52,68			8. 47. 51,15	T.		
	(f) Hygeia B. ....	39,8	53,6	47,7	1,3	....	....	....	8. 47. 52,25				52,78			8. 47. 51,25	T.		
	(g) * N.P.D. 75°. 44'. ..	32,7	46,5	0,3	14,0	28,1	42,0	56,0	9. 12. 14,23				14,89			9. 12. 13,40	T.		
	Regulus .....	55,7	9,7	23,2	37,2	51,0	4,7	18,7	10. 0. 37,17				37,83	-1,45			T.		
	Regulus B. ....	25,7	39,1	32,3	46,0	....	....	....	10. 0. 37,42				37,84				T.		
Mar. 28	$\epsilon$ Hydræ .....	21,0	34,7	48,0	1,7	15,3	28,7	42,3	8. 39. 1,67			-0,1	2,40	0,55	1,94	8. 39. 2,91	T.		
	$\epsilon$ Hydræ B. ....	51,6	4,7	55,8	9,3	....	....	....	8. 39. 1,96				2,45			8. 39. 2,96	T.		
	Hygeia B. ....	35,3	49,3	43,4	57,2	....	....	....	8. 47. 47,95				48,63			8. 47. 49,15	T.		
	(g) * N.P.D. 75°. 44'. ..	30,2	....	....	....	....	39,9	....	9. 12. 11,99				12,67			9. 12. 13,22	T.		
	$\alpha$ Hydræ .....	43,3	57,0	10,4	24,2	37,8	51,3	4,7	9. 20. 24,10				24,80	0,61		9. 20. 25,36	T.		
	H. C. 18763 .....	35,7	49,7	3,7	18,1	32,5	46,4	0,8	9. 25. 18,13				18,78			9. 25. 19,35	T.		
	B. (w.) IX. 625 .....	33,7	47,3	0,8	14,8	28,8	42,4	56,3	9. 28. 14,87				15,56			9. 28. 16,14	T.		
	(h) B. (w.) IX. 676 .....	....	10,4	23,8	37,7	51,2	4,7	....	9. 30. 37,55				38,27			9. 30. 38,85	T.		
	(i) * N.P.D. 74°. 32'. ..	44,7	58,3	12,3	....	40,7	54,7	8,4	9. 34. 26,53				27,21			9. 34. 27,79	T.		
	* N.P.D. 74°. 32'. B. ..	14,3	27,7	22,3	36,2	....	....	....	9. 34. 26,79				27,35			9. 34. 27,93	T.		
	B. (w.) IX. 949 .....	58,7	12,4	25,9	39,9	53,7	7,6	21,5	9. 43. 39,96				40,65			9. 43. 41,25	T.		
	(k) H. C. 19442 .....	58,9	12,8	26,7	40,7	54,7	8,8	22,6	9. 48. 40,74				41,42			9. 48. 42,02	T.		
	H. C. 19442 B. ....	28,2	41,8	36,4	50,3	....	....	....	9. 48. 40,84				41,40			9. 48. 42,00	T.		
	H. C. 19570 .....	41,2	55,3	9,0	23,4	37,3	51,3	5,3	9. 53. 23,26				23,92			9. 53. 24,53	T.		
	B. (w.) IX. 1220 .....	51,7	5,7	19,2	33,3	47,3	1,0	14,7	9. 56. 33,27				33,94			9. 56. 34,56	T.		
	Regulus .....	53,8	7,7	21,3	35,3	49,0	2,7	16,4	10. 0. 35,17				35,86	0,53		10. 0. 36,48	T.		
	Regulus B. ....	23,7	37,1	30,2	44,0	....	....	....	10. 0. 35,39				35,84			10. 0. 36,46	T.		
	$\delta$ Leonis .....	36,7	51,3	5,4	20,3	34,8	49,0	3,4	11. 6. 20,12				20,75			11. 6. 21,46	T.		
	$\delta$ Leonis B. ....	5,3	19,3	17,8	32,0	....	....	....	11. 6. 20,32				20,71	0,68		11. 6. 21,42	T.		
	(l) Eunomia .....	55,2	49,1	2,8	16,6	30,2	44,3	58,2	11. 23. 16,63				17,34			11. 23. 18,07	T.		
	Eunomia B. ....	4,7	18,2	11,3	25,3	....	....	....	11. 23. 16,52				17,11			11. 23. 17,84	T.		
	(m) B. (w.) XI. 657 ... ..	57,2	10,4	24,3	37,5	51,2	4,4	17,9	11. 37. 37,56				38,28			11. 37. 39,03	T.		
	Massilia .....	....	....	....	....	49,0	2,4	....	11. 38. 22,10				22,82			11. 38. 23,57	T.		
	Massilia B. ....	....	....	16,0	29,2	....	....	....	11. 38. 22,39				22,99			11. 38. 23,74	T.		
	(n) Bellona .....	42,0	....	....	....	36,7	50,4	....	11. 46. 9,34				10,04			11. 46. 10,80	T.		
	Bellona B. ....	58,0	....	3,5	17,3	....	....	....	11. 46. 9,14				9,72			11. 46. 10,48	T.		
	B. (w.) XI. 868 .....	3,7	17,3	30,7	44,3	57,4	11,0	24,4	11. 50. 44,11				44,83			11. 50. 45,60	T.		
	B. (w.) XI. 868 B. ....	34,3	47,3	37,7	51,2	....	....	....	11. 50. 44,23				44,83			11. 50. 45,60	T.		
	Calliope .....	....	....	14,0	28,2	....	....	....	12. 6. 17,11				17,58			12. 6. 18,37	T.		
	$\beta$ Corvi. ....	59,3	14,0	28,4	43,2	57,7	12,3	26,7	12. 26. 43,08				43,85	0,79		12. 26. 44,67	T.		
	(o) Amphitrite .....	8,2	22,2	35,4	49,2	....	16,4	30,0	12. 57. 49,18				49,89			12. 57. 50,75	T.		
	Spica .....	48,7	2,3	15,8	29,8	43,6	57,1	10,7	13. 17. 29,72				30,43	0,98		13. 17. 31,32	T.		
	Spica B. ....	18,8	32,1	24,4	38,0	....	....	....	13. 17. 29,96				30,43			13. 17. 31,32	T.		
Mar. 29	(p) $\odot$ 2 L .....	31,7	45,3	58,7	12,3	25,7	39,1	52,7	0. 32. 12,21				12,94		1,86	0. 32. 14,67	T.		
	$\beta$ Tauri .....	14,7	29,8	45,0	0,7	15,8	31,1	46,3	5. 17. 0,48				1,06	2,04		5. 17. 3,16	T.		
	Pollux .....	34,0	49,3	4,2	....	35,2	50,1	5,3	7. 35. 19,69				20,27	2,38		7. 35. 22,55	T.		
	(q) Melpomene B. ....	6,7	20,7	17,1	31,0	....	....	....	8. 9. 20,57				21,05			8. 9. 23,37	T.		
	Regulus .....	51,7	5,7	19,3	33,2	47,0	0,8	14,6	10. 0. 33,18				33,87	2,48		10. 0. 36,34	T.		
	Regulus B. ....	21,7	35,2	28,4	42,0	....	....	....	10. 0. 33,47				33,92			10. 0. 36,39	T.		

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°, 327, - 26°, 895, - 13°, 656, - 0°, 010, + 13°, 633, + 26°, 905, + 40°, 349.

(a) 'Good: no object near.' (b) The noted times have been diminished 10". (c) Cloudy. (d) Faint from cloud. (e) 'The middle of three objects in a line: a very small star near it.' (f) 'Only a bright star preceding.' (g) Mistaken for Fortuna, and observed also with the Circle. (h) The counting was 1" slow: correction applied. (i) 'North-following H. C. 19039.' (k) 'A fainter preceding about 10". (l) 'Good: easily seen and alone.' (m) Taken at first for Massilia. (n) 'A fainter of the same N.P.D. preceded about 15". (o) A fainter object south-following was also observed. (p) The noted times have been increased 1". (q) 'Good.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Mar. 29	Eunomia .....	44,8	58,7	12,0	26,3	40,2	53,8	7,5	11. 22. 26,19	+3,8	-0,1	+1,4	26,90		1,86	11. 22. 29,47			T.
	Eunomia B. ....	14,5	27,9	21,4	35,0	....	....	....	11. 22. 26,34				26,93			11. 22. 29,50			T.
	$\beta$ Leonis .....	52,7	6,7	20,3	34,6	48,7	2,3	16,2	11. 41. 34,50				35,17	2,54		11. 41. 37,77			T.
	Bellona .....	45,0	58,8	....	26,2	39,5	53,3	7,0	11. 45. 26,00				26,69			11. 45. 29,29			T.
	Bellona B. ....	....	28,2	21,1	34,1	....	....	....	11. 45. 26,22				26,79			11. 45. 29,39			T.
Mar. 30	$\alpha$ Hydræ .....	....	....	6,7	20,4	34,0	47,3	1,2	9. 20. 20,34				21,04	4,35	1,81	9. 20. 25,32			T.
	(a) Regulus .....	50,0	3,7	17,4	31,5	45,2	59,0	12,8	10. 0. 31,37				32,06	4,30		10. 0. 36,40			T.
	$\delta$ Leonis .....	33,2	47,7	1,7	16,4	30,9	45,3	59,7	11. 6. 16,42				17,05	4,35		11. 6. 21,47			T.
	(b) Eunomia .....	55,5	9,3	23,0	37,0	50,7	4,2	18,1	11. 21. 36,83				37,54			11. 21. 41,98			T.
	Eunomia B. ....	25,2	....	32,1	45,7	....	....	....	11. 21. 37,06				37,65			11. 21. 42,09			T.
	(c) Massilia .....	1,3	15,0	28,1	41,7	55,1	8,5	22,0	11. 36. 41,67				42,39			11. 36. 46,85			T.
	Massilia B. ....	....	45,1	35,4	48,7	....	....	....	11. 36. 41,88				42,48			11. 36. 46,94			T.
	$\beta$ Leonis .....	50,8	4,7	18,6	32,6	46,5	0,3	14,3	11. 41. 32,54				33,21	4,50		11. 41. 37,67			T.
	$\beta$ Leonis B. ....	20,3	33,7	28,3	42,3	....	....	....	11. 41. 32,81				33,24			11. 41. 37,70			T.
	(d) Bellona .....	....	....	....	44,3	....	11,3	25,2	11. 44. 44,08				44,78			11. 44. 49,25			T.
	Bellona B. ....	....	....	38,4	52,0	....	....	....	11. 44. 43,85				44,43			11. 44. 48,90			T.
	B. (w.) xi. 978...	33,7	47,0	0,7	14,0	27,6	40,7	54,3	11. 57. 14,00				14,72			11. 57. 19,20			T.
	(e) Calliope .....	....	4,2	18,1	32,1	....	....	15,3	12. 4. 32,45				33,09			12. 4. 37,58			T.
	Calliope B. ....	18,3	32,2	30,0	44,1	....	....	....	12. 4. 32,85				33,37			12. 4. 37,86			T.
	(f) Polaris SP. ....	59,0	43,5	....	10,0	2,5	42,0	34,5	13. 5. 13,96				6,62			13. 5. 11,19			T.
	(g) Amphitrite .....	13,0	26,7	40,0	54,0	7,3	21,3	34,7	12. 55. 53,86				54,57			12. 55. 59,13			T.
	Amphitrite B. ....	43,2	56,3	48,3	1,7	....	....	....	12. 55. 54,00				54,59			12. 55. 59,15			T.
	Spica .....	45,2	58,7	12,3	26,3	39,8	53,7	7,0	13. 17. 26,14				26,85	4,59		13. 17. 31,43			T.
Mar. 31	(h) $\odot$ 1 L. ....	35,3	49,2	2,7	16,2	29,2	42,7	56,4	0. 37. 15,96				16,69		1,71	0. 37. 22,10			T.
	$\odot$ 2 L. ....	44,3	57,7	11,0	24,7	38,3	51,7	5,3	0. 39. 24,71				25,44			0. 39. 30,86			T.
	Polaris .....	....	24,0	5,0	59,5	43,0	28,0	17,0	1. 4. 56,39				3,84			1. 5. 9,29			T.
	Polaris M. ....	48,0	30,5	15,5	59,5	42,5	28,0	15,0	1. 4. 57,18				4,63			1. 5. 10,08			T.
	Polaris B. ....	....	....	55,5	45,0	....	....	....	....				....			....			T.
	Procyon .....	52,3	6,0	19,3	32,9	46,5	59,8	13,4	7. 31. 32,88				33,61	5,93		7. 31. 39,52			T.
	(i) Pollux .....	30,3	45,7	0,7	16,2	31,7	46,8	1,8	7. 36. 16,17				16,75	5,87		7. 36. 22,66			T.
	$\alpha$ Hydræ .....	37,8	51,4	4,7	18,7	32,2	45,7	59,4	9. 20. 18,56				19,26	6,12		9. 20. 25,30			T.
	(k) B. (w.) ix. 1146..	52,2	6,0	19,3	33,0	46,7	59,9	13,7	9. 53. 32,97				33,70			9. 53. 39,78			T.
	B. (w.) ix. 1232..	23,4	36,8	50,4	4,0	17,7	31,0	44,3	9. 57. 3,94				4,67			9. 57. 10,75			T.
	Regulus .....	48,2	1,8	15,7	29,7	43,7	57,1	11,0	10. 0. 29,60				30,29	6,07		10. 0. 36,37			T.
	$\delta$ Leonis .....	31,7	45,8	0,1	14,7	29,1	43,7	57,8	11. 6. 14,70				15,36	6,04		11. 6. 21,52			T.
	(l) Eunomia B. ....	36,7	49,8	43,2	57,2	....	....	....	11. 20. 48,37				48,91			11. 20. 55,09			T.
	B. (w.) xi. 445..	12,4	26,0	39,2	53,0	6,7	20,1	33,5	11. 25. 52,98				53,71			11. 25. 59,90			T.
	H. C. 22044....	26,7	40,2	53,7	7,2	20,8	34,4	48,0	11. 30. 7,29				8,01			11. 30. 14,20			T.
	B. (w.) xi. 576..	16,3	29,7	43,0	56,6	10,1	23,7	37,0	11. 32. 56,63				57,35			11. 33. 3,54			T.
	Massilia .....	12,3	26,0	39,5	52,9	6,5	20,2	33,6	11. 35. 53,00				53,72			11. 35. 59,92			T.
	Massilia B. ....	....	....	46,7	0,3	....	....	....	11. 35. 53,27				53,87			11. 36. 0,07			T.
	B. (w.) xi. 701..	20,8	34,7	47,9	1,6	15,1	28,7	42,2	11. 40. 1,57				2,30			11. 40. 8,50			T.
	(m) Bellona B. ....	....	....	57,4	11,3	....	....	....	11. 44. 2,98				3,50			11. 44. 9,71			T.
	B. (w.) xi. 940..	10,3	23,9	37,3	51,2	4,7	18,1	31,6	11. 54. 51,01				51,74			11. 54. 57,96			T.
	B. (w.) xi. 1002..	59,4	13,3	26,7	40,2	53,6	7,3	20,7	11. 58. 40,17				40,90			11. 58. 47,12			T.
	Calliope .....	....	....	27,2	41,4	56,0	....	....	12. 3. 41,53				42,17			12. 3. 48,40			T.
	Calliope B. ....	27,1	41,2	38,7	52,7	....	....	....	12. 3. 41,63				42,15			12. 3. 48,38			T.
	$\beta$ Corvi .....	53,7	8,4	22,9	37,7	52,3	6,7	21,3	12. 26. 37,57				38,34	6,31		12. 26. 44,60			T.
	Amphitrite .....	....	....	....	55,7	9,2	23,0	36,5	12. 54. 55,65				56,36			12. 55. 2,65			T.
	Amphitrite B. ....	....	....	50,2	3,8	....	....	....	12. 54. 56,04				56,63			12. 55. 2,92			T.
	Polaris SP. M. ....	53,0	39,0	24,5	10,0	53,0	36,0	21,0	13. 5. 10,75				3,41			13. 5. 9,71			T.
	(n) Spica .....	43,7	56,8	10,7	24,7	37,8	51,7	5,3	13. 17. 24,39				25,10			13. 17. 31,42			T.
	(o) $\alpha$ Andromedæ ..	....	....	26,2	41,7	56,8	12,2	27,3	0. 0. 41,57				42,15	7,00	1,65	0. 0. 49,22			T.
Apr. 1	$\odot$ 1 L. ....	....	25,2	38,3	52,0	5,3	19,2	32,7	0. 40. 52,02				52,75			0. 40. 59,87			T.
	$\odot$ 2 L. ....	20,2	33,7	47,2	0,9	14,7	27,8	41,7	0. 43. 0,88				1,61			0. 43. 8,73			T.
	(p) Polaris .....	....	31,0	4,0	....	44,0	28,5	12,0	1. 4. 56,83				4,28			1. 5. 11,42			T.
	Polaris B. ....	....	44,5	....	42,5	....	....	....	....				....			....			T.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40', 327, - 26', 895, - 13', 656, - 0', 010, + 13', 633, + 26', 905, + 40', 349.

(a) Wires I and II have each been increased 1". considered best. (e) Very faint. (f) Diffused. (g) 'Good.' (h) 'Bright and alone; good observation.' (i) Disturbance throughout: the first five wires have been diminished 1" and the last two 2". (j) 'One of equal magnitude north-following.' (k) 'One of equal magnitude north-following.' (l) Faint from cloud: could only be observed at the bars. (m) Extremely faint, but these times were considered good. (n) Wire V was set down 36,8 and has been altered conjecturally. (o) Not seen earlier, being faint from day-light. (p) Very unsteady throughout.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Asimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Apr. 1	$\alpha$ Arietis.....	3,8	18,4	32,9	47,7	2,2	16,7	31,4	1.58.47,59	+3,8	-0,1	+1,4	48,21	7,25	1,65	1.58.55,42	T.		
	Sirius.....	52,4	6,3	20,2	34,3	48,4	2,4	16,7	6.38.34,39				35,11	7,56		6.38.42,64	T.		
	(a) $\alpha$ Hydræ.....	49,4	3,3	16,7	30,3	43,9	57,7	9.20.16,76				17,46	7,91		9.20.25,17	T.			
	Regulus.....	46,7	0,6	13,9	27,9	41,7	55,7	9,2	10.0.27,96				28,65	7,70		10.0.36,41	T.		
	$\delta$ Leonis.....	29,7	44,2	58,7	13,2	27,7	41,8	56,3	11.6.13,08				13,71	7,69		11.6.21,54	T.		
	(b) Eunomia.....	18,3	33,0	....	....	14,4	28,0	41,7	11.20.0,31				1,02			11.20.8,87	T.		
	Eunomia B.....	2,2	55,7	9,2	....	....	....	....	11.20.0,64				1,23			11.20.9,08	T.		
	(b)(c) Massilia.....	25,2	38,8	52,3	5,7	19,2	32,7	46,0	11.35.5,70				6,42			11.35.14,29	T.		
	Massilia B.....	56,1	9,2	59,4	12,7	....	....	....	11.35.5,95				6,55			11.35.14,42	T.		
	(d) Bellona.....	54,7	8,3	....	36,6	....	....	....	11.43.22,36				23,05			11.43.30,93	T.		
Bellona B.....	11,1	24,7	17,1	30,8	....	....	....	11.43.22,56				23,13			11.43.31,01	T.			
Apr. 4	Regulus.....	42,8	56,7	10,4	24,2	38,2	51,7	5,5	10.0.24,21	-4,2	-1,0	+8,4	23,89	12,43	1,49	10.0.36,35	T.		
	$\beta$ Leonis.....	43,7	57,7	11,7	25,4	39,7	53,5	7,4	11.41.25,59				25,25	12,46		11.41.37,82	T.		
	$\beta$ Corvi.....	....	....	17,2	31,8	46,7	1,2	15,7	12.26.31,96				31,91	12,76		12.26.44,52	T.		
	(e) Polaris SP. M... ..	21,0	8,5	52,0	34,5	20,0	5,0	49,0	13.4.33,03				0,02			13.5.12,67	T.		
	Polaris SP.....	....	....	....	34,5	18,5	1,0	45,0	13.4.30,56				57,55			13.5.10,20	T.		
	Spica.....	37,9	51,7	5,2	18,7	32,7	46,3	0,0	13.17.18,93				18,82	12,66		13.17.31,49	T.		
	(f) $\alpha$ Andromedæ... ..	50,7	5,4	21,1	35,9	....	6,7	21,9	0.0.36,19				35,81	13,39		0.0.49,16	T.		
Apr. 5	(g) $\odot$ 2 L.....	49,7	3,6	16,9	30,7	44,2	57,7	11,6	0.57.30,62				30,33			0.57.43,74	T.		
	Polaris.....	6,0	54,5	....	22,0	12,0	51,5	40,5	1.5.23,15				57,43	14,55		1.5.10,84	T.		
	(h) Polaris M.....	9,5	54,0	38,0	22,0	6,0	49,5	35,0	1.5.24,68				58,96			1.5.12,37	T.		
	$\epsilon$ Hydræ.....	8,7	22,3	35,6	49,2	3,0	16,4	30,0	8.38.49,32				49,03	13,83		8.39.2,89	T.		
	$\delta$ Leonis.....	24,7	38,7	53,3	7,7	22,3	36,4	51,0	11.6.7,73				7,33	14,00		11.6.21,38	T.		
	(b) Massilia.....	....	42,7	....	9,7	23,3	36,6	50,2	11.32.9,73				9,49			11.32.23,51	T.		
	Massilia B.....	....	....	4,2	17,2	....	....	....	11.32.10,05				9,69			11.32.23,71	T.		
	(i) Bellona B.....	....	55,3	47,8	1,2	....	....	....	11.40.52,70				52,21			11.41.6,24	T.		
	(i)(k) Calliope B.....	....	....	33,6	47,2	....	....	....	11.59.35,91				35,39			11.59.49,44	T.		
	(l) $\beta$ Corvi.....	46,7	1,3	16,1	30,7	45,3	59,7	14,4	12.26.30,60				30,55	14,12		12.26.44,63	T.		
	Polaris SP.....	11,5	59,5	....	30,5	19,0	2,5	48,0	13.43.0,21				57,20			13.5.11,31	T.		
	(m) Polaris SP. M... ..	21,0	5,0	50,0	30,5	17,5	4,5	48,5	13.4.31,18				58,17			13.5.12,28	T.		
	(n) Amphitrite... ..	25,2	38,8	52,3	5,8	19,8	33,2	46,8	12.50.5,99				5,87			12.50.19,97	T.		
	Amphitrite B.....	55,7	9,2	0,8	14,1	....	....	....	12.50.6,16				5,92			12.50.20,02	T.		
	Spica.....	36,7	50,0	3,6	17,6	31,4	44,7	58,7	13.17.17,53				17,42	14,07		13.17.31,55	T.		
Apr. 6	(o) Bellona.....	34,8	....	2,7	....	....	44,0	....	11.40.16,37	+3,8	-0,8	+1,1	17,02		1,34	11.40.32,37	T.		
	Bellona B.....	5,2	18,3	....	....	....	....	....	11.40.16,51				17,04			11.40.32,39	T.		
	(p) Calliope B.....	....	....	45,2	59,2	....	....	....	11.58.48,11				48,52			11.59.3,89	T.		
	(q) $\beta$ Corvi.....	....	59,7	13,8	28,7	43,1	57,7	12,1	12.26.28,57				29,31	15,37		12.26.44,70	T.		
	(b) Amphitrite.....	26,7	40,3	53,7	7,3	21,2	34,8	48,3	12.49.7,47				8,13			12.49.23,55	T.		
	Amphitrite B.....	....	10,1	1,8	15,3	....	....	....	12.49.7,65				8,19			12.49.23,61	T.		
	Spica.....	34,3	47,8	1,4	15,4	29,0	42,7	56,3	13.17.15,27				15,94	15,56		13.17.31,38	T.		
	Arcturus.....	2,7	16,7	30,9	45,6	59,7	14,0	28,3	14.8.45,41				45,99	15,40		14.9.1,48	T.		
Apr. 7	(r) $\odot$ 1 L.....	55,2	8,7	22,2	35,9	....	....	....	1.2.35,88				36,56		1,42	1.2.52,63	T.		
	(r)(s) Polaris.....	....	....	58,0	....	35,0	....	....	1.4.47,81				54,25			1.5.10,32	T.		
	(t) Regulus.....	37,7	51,4	5,0	19,1	32,7	46,7	0,3	10.0.18,99				19,63	16,66		10.0.36,23	T.		
	B. (w.) x. 81....	48,7	2,2	15,7	29,7	43,4	56,7	10,4	10.5.29,55				30,21			10.5.46,82	T.		
	B. (w.) x. 141....	9,4	23,3	36,9	50,9	4,7	18,7	32,3	10.8.50,88				51,52			10.9.8,13	T.		
	* N.P.D. 78°. 8'.	....	28,2	42,7	56,3	10,0	23,7	37,3	10.11.56,16				56,81			10.12.13,42	T.		
	B. (w.) x. 458....	24,3	37,8	51,7	5,7	19,7	33,4	47,0	10.26.5,66				6,30			10.26.22,93	T.		
	H. C. 20522.....	18,3	32,2	46,0	59,9	13,8	27,7	41,3	10.28.59,89				0,52			10.29.17,15	T.		
	B. (w.) x. 595....	46,9	0,4	13,9	27,7	41,5	55,0	8,7	10.33.27,73				28,40			10.33.45,03	T.		
	B. (w.) x. 673....	4,7	18,7	32,3	46,0	59,7	13,7	27,0	10.37.46,01				46,67			10.38.3,31	T.		
	$\delta$ Leonis.....	20,7	35,4	49,7	4,2	18,7	33,2	47,7	11.6.4,23				4,80	16,57		11.6.21,47	T.		
	(u) Massilia.....	8,2	21,7	....	....	....	....	....	11.30.48,58				49,26			11.31.5,95	T.		
	Massilia B.....	38,8	....	....	55,7	....	....	....	11.30.48,79				49,35			11.31.6,04	T.		
	(x) Bellona B.....	....	....	37,2	51,2	....	....	....	11.39.42,68				43,16			11.39.59,86	T.		

ILLUMINATION EAST. From April 4, WEST. From April 6, EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,327, -26°,895, -13°,656, -0°,010, +13°,633, +26°,905, +40°,349. From April 4, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327. From April 6, -40°,327, -26°,895, -13°,656, -0°,010, +13°,633, +26°,905, +40°,349.

(a) Almost hid by cloud. (b) 'Good.' (c) Bright. (d) Extremely faint and difficult to observe. (e) Badly defined and unsteady.  
(f) Bad image and scarcely seen. (g) Definition not good. (h) The coincidence reading used was 10°,330: after the observation the reading was found to be 10°,318. No account has been taken of the latter. (i) Extremely faint. (k) Visible only at these bars. (l) The times have been increased 1°. (m) Coincidence reading 10°,272. (n) 'A bright object south-preceding.' (o) A faint object north-preceding was also observed. (p) Very faint: seen only at these bars. (q) Faint from mist. (r) Cloudy. (s) These times were considered exact, the star being well defined and steady. (t) The counting being found 1° fast, the last three wires have been diminished 1°. (u) The same observer took the Circle observation. (x) So faint it could only be taken at these bars. The observation was considered pretty good.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Apr. 7	$\beta$ Corvi.....	43,6	58,2	12,4	27,3	41,8	56,3	10,7	12. 26. 27,19	+3,8	-0,8	+1,1	27,93	16,75	1,42	12. 26. 44,68			T.
	(a) B. (w.) XII. 490..	39,1	52,3	5,7	19,4	32,9	46,3	59,7	12. 29. 19,35				20,02			12. 29. 36,77			T.
	B. (w.) XII. 563..	58,3	11,3	25,2	38,7	52,2	5,7	19,2	12. 33. 38,66				39,33			12. 33. 56,08			T.
	B. (w.) XII. 622..	59,6	13,0	26,2	40,0	53,3	6,7	20,0	12. 36. 39,82				40,50			12. 36. 57,26			T.
	(b) Polaris SP.....	42,5	....	14,0	58,5	50,0	....	17,0	13. 5. 0,08				53,65			13. 5. 10,43			T.
	Amphitrite.....	29,1	42,8	....	....	24,0	....	....	12. 48. 10,07				10,73			12. 48. 27,50			T.
	(c) Amphitrite B....	....	....	4,6	17,7	....	....	....	12. 48. 10,26				10,80			12. 48. 27,57			T.
	Spica.....	33,0	46,7	0,3	14,2	27,7	41,3	54,9	13. 17. 14,01				14,68	16,83		13. 17. 31,48			T.
Apr. 8	(d) $\odot$ 1 L.....	33,3	47,0	0,3	14,1	....	....	....	1. 6. 14,08				14,75		1,40	1. 6. 32,34			T.
	$\odot$ 2 L.....	42,7	....	....	....	....	50,2	....	1. 8. 23,24				23,91			1. 8. 41,50			T.
	Regulus.....	36,3	50,0	3,7	17,4	31,4	45,1	58,9	10. 0. 17,55				18,19	18,09		10. 0. 36,29			T.
	(e) $\delta$ Leonis.....	....	....	48,2	2,7	17,1	31,6	46,0	11. 6. 2,69				3,26	18,10		11. 6. 21,43			T.
	(f) $\beta$ Corvi.....	41,7	56,7	11,0	25,7	40,2	54,9	9,2	12. 26. 25,63				26,37	18,31		12. 26. 44,62			T.
	(g) Amphitrite.....	31,9	45,3	58,4	....	....	....	53,2	12. 47. 12,54				13,20			12. 47. 31,47			T.
	Amphitrite B....	2,2	15,2	7,1	20,6	....	....	....	12. 47. 12,90				13,44			12. 47. 31,71			T.
	B. (w.) XIII. 55..	36,7	50,3	3,6	17,7	30,7	44,3	57,7	13. 4. 17,29				17,96			13. 4. 36,24			T.
	(h) B. (w.) XIII. 103..	18,7	32,3	46,0	59,7	13,4	27,0	40,7	13. 6. 59,69				0,36			13. 7. 18,65			T.
	(i) B. (w.) XIII. 163..	28,6	42,4	56,1	9,8	23,4	37,7	51,1	13. 10. 9,88				10,55			13. 10. 28,84			T.
	B. (w.) XIII. 206..	....	....	16,7	50,6	44,3	57,9	11,3	13. 12. 30,53				31,20			13. 12. 49,49			T.
	H. C. 24801.....	....	53,3	7,0	20,4	34,3	48,0	....	13. 15. 20,59				21,26			13. 15. 39,55			T.
	Spica.....	31,3	45,2	58,7	12,7	26,4	40,0	53,6	13. 17. 12,56				13,23	18,29		13. 17. 31,53			T.
	(k) B. (w.) XIII. 342..	43,4	57,1	10,5	24,3	37,6	51,6	5,0	13. 21. 24,21				24,87			13. 21. 43,17			T.
Apr. 9	$\alpha$ Andromedæ....	....	58,2	13,7	28,8	44,1	59,4	14,7	0. 0. 28,84				29,38	19,89	1,24	0. 0. 49,37			T.
	(l) Polaris.....	27,0	15,5	53,5	46,5	....	27,0	2,0	1. 4. 46,49				52,16			1. 5. 12,21			T.
	Polaris B.....	....	....	45,5	29,0	....	....	....											T.
Apr. 10	(m) $\odot$ 1 L.....	49,6	3,2	16,4	30,2	44,2	57,7	11,3	1. 13. 30,37				31,06			1. 13. 51,11			T.
	$\odot$ 2 L.....	....	12,7	26,2	40,2	53,7	7,2	20,8	1. 15. 39,99				40,68			1. 16. 0,74			T.
	(n) $\alpha$ Arietis.....	....	....	....	34,9	....	....	18,7	1. 58. 34,91				35,49	19,98					T.
	B. (w.) x. 610....	15,0	28,7	42,3	56,1	9,7	23,2	36,8	10. 33. 55,97				56,66			10. 34. 17,20			T.
	(o) B. (w.) x. 659....	0,6	14,0	27,3	40,7	54,5	8,0	21,4	10. 36. 40,93				41,64			10. 37. 2,18			T.
	(p) B. (w.) x. 722....	38,6	51,9	5,7	19,1	32,9	46,3	59,9	10. 40. 19,20				19,89			10. 40. 40,43			T.
	$\delta$ Leonis.....	....	31,3	45,7	0,3	14,7	29,0	43,5	11. 6. 0,20				0,79	20,56		11. 6. 21,35			T.
	B. (w.) xi. 149..	35,6	49,1	2,6	16,3	29,7	43,5	56,7	11. 9. 16,21				16,90			11. 9. 37,47			T.
	Eunomia.....	57,2	11,0	24,6	38,3	52,3	6,0	19,5	11. 13. 38,42				39,12			11. 13. 59,69			T.
	(q) Eunomia B.....	27,2	40,7	33,3	47,2	....	....	....	11. 13. 38,74				39,32			11. 13. 59,89			T.
	(r) $\epsilon$ Leonis.....	50,7	4,1	17,4	30,9	44,6	57,8	11,3	11. 22. 30,97				31,67			11. 22. 52,25			T.
	B. (w.) xi. 446..	58,7	12,3	25,7	39,6	53,3	6,7	20,4	11. 25. 39,53				40,22			11. 26. 0,80			T.
	Massilia.....	18,7	32,6	45,7	59,3	12,5	26,3	39,8	11. 28. 59,27				59,98			11. 29. 20,56			T.
	Massilia B.....	49,3	2,7	53,4	6,6	....	....	....	11. 28. 59,60				0,19			11. 29. 20,77			T.
	(s) B. (w.) xi. 592..	58,2	11,5	24,7	38,5	51,8	5,2	18,7	11. 33. 38,37				39,07			11. 33. 59,66			T.
	(t) $\beta$ Leonis.....	....	....	....	....	30,7	44,4	58,2	11. 41. 16,52				17,16	20,54		11. 41. 37,75			T.
	B. (w.) xi. 867..	39,2	52,7	6,0	19,7	33,1	46,7	59,9	11. 50. 19,62				20,32			11. 50. 40,92			T.
	B.A.C. 4054.....	32,7	46,0	59,6	13,1	26,7	40,0	53,7	11. 53. 13,11				13,82			11. 53. 34,43			T.
	(u) Calliope.....	....	....	....	....	....	....	41,0	11. 55. 58,13				58,73			11. 56. 19,34			T.
	Calliope B.....	....	....	55,3	9,4	....	....	....	11. 55. 58,31				58,79			11. 56. 19,40			T.
	$\beta$ Corvi.....	39,4	54,0	8,4	22,3	37,9	52,1	6,9	12. 26. 23,14				23,91	20,78		12. 26. 44,54			T.
	Amphitrite.....	38,6	52,2	5,7	19,3	32,7	46,5	0,2	12. 45. 19,32				20,01			12. 45. 40,66			T.
	Amphitrite B....	8,7	21,7	13,6	27,1	....	....	....	12. 45. 19,40				19,97			12. 45. 40,62			T.
	Polaris SP.....	44,5	24,5	....	50,0	....	26,5	13,0	13. 4. 55,26				49,66			13. 5. 10,33			T.
	Spica.....	28,8	42,7	56,3	10,0	23,7	37,4	51,0	13. 17. 9,98				10,68	20,85		13. 17. 21,36			T.
	Arcturus.....	57,2	11,7	25,8	40,3	54,6	8,7	23,0	14. 8. 40,18				40,78	20,66		14. 9. 1,50			T.
	(x) B. (w.) xiv. 283..	53,8	7,4	21,3	35,1	48,9	2,7	16,4	14. 15. 35,09				35,79			14. 15. 56,52			T.
	(y) Hebe B.....	....	....	56,7	10,2	....	....	....	14. 22. 2,69				3,21			14. 22. 23,94			T.
	Polaris.....	27,0	13,0	56,5	45,5	32,0	17,0	3,0	1. 4. 44,86			-1,1	49,90		1,36	1. 5. 11,17			T.
	(z) Polaris M.....	33,0	17,0	59,0	45,5	32,0	14,0	2,0	1. 4. 43,39				48,43			1. 5. 9,70			T.
	Polaris B.....	56,5	35,0	41,5	29,5	....	....	....											T.

ILLUMINATION EAST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,327$ ,  $-26^s,895$ ,  $-13^s,656$ ,  $-0^s,010$ ,  $+13^s,633$ ,  $+26^s,905$ ,  $+40^s,349$ .

(a) 'Only one star.' (b) Bad image and unsteady. (c) Extremely faint, the sky being misty. (d) Clouds continually passing, but the definition good. (e) Hid by cloud at wires I and II, and nearly invisible at some of the others. (f) Cloudy. (g) Alone and observed satisfactorily. (h) 'Another north-following.' (i) Extremely faint. (k) The recorded time was 1<sup>m</sup> earlier. (l) Unsteady. (m) Bad definition. (n) Visible only at these two wires. The observation is retained for clock-error, as being near the transit of the Sun. (o) 'A brighter followed about 24<sup>s</sup> viz. B. (w.) x. 664.' (p) 'Only one star.' (q) 'Good: the preceding of two.' (r) The noted times have been increased 11<sup>s</sup>. (s) 'One equal north-following.' (t) Delayed by an attempt to observe Bellona. (u) Very faint. (x) 'The north-following of two equal.' (y) The Planet was considered to be of Mag. 3 $\frac{1}{2}$ . (z) Unsteady except at wires II, III, and IV.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Apr. 11	(a) ☉ 1 L.....	28,2	42,1	55,4	9,4	23,2	36,7	50,3	1. 17. 9,33	+3,8	-1,1	+1,6	10,01		1,36	1. 17. 31,29			T.
	☉ 2 L.....	37,3	51,5	5,0	18,7	32,7	46,1	59,6	1. 19. 18,70				19,38			1. 19. 40,67			T.
	α Arietis.....	49,7	4,7	18,9	33,7	48,2	2,8	....	1. 58. 33,62				34,18	21,29		1. 58. 55,50			T.
	δ Leonis.....	15,7	30,3	44,4	59,0	13,5	27,7	42,3	11. 5. 58,99				59,56	21,79		11. 6. 21,40			T.
	Eunomia.....	20,6	34,4	47,8	1,5	15,6	29,6	43,0	11. 13. 1,78				2,47			11. 13. 24,32			T.
	Eunomia B.....	....	3,9	56,7	10,3	....	....	....	11. 13. 1,98				2,55			11. 13. 24,40			T.
	B.A.C. 3892....	41,8	55,6	9,0	22,7	36,6	50,2	3,7	11. 18. 22,80				23,48			11. 18. 45,33			T.
	ε Leonis.....	49,7	3,0	16,2	29,7	43,5	56,7	10,1	11. 22. 29,85				30,54			11. 22. 52,40			T.
	B. (w.) XI. 446..	57,7	11,2	24,7	38,7	52,1	5,7	19,2	11. 25. 38,47				39,15			11. 26. 1,01			T.
	Massilia.....	45,7	59,1	12,5	26,2	39,7	52,9	6,7	11. 28. 26,11				26,81			11. 28. 48,67			T.
	Massilia B.....	....	....	20,0	33,2	....	....	....	11. 28. 26,32				26,90			11. 28. 48,76			T.
	(b) Bellona.....	....	....	....	52,0	5,9	....	....	11. 37. 38,28				38,93			11. 38. 0,80			T.
	Bellona B.....	27,2	40,8	33,6	47,3	....	....	....	11. 37. 38,87				39,40			11. 38. 1,27			T.
	B. (w.) XI. 823..	55,7	8,9	22,2	35,9	49,7	2,8	16,2	11. 47. 55,91				36,61			11. 47. 58,49			T.
	B. (w.) XI. 848..	....	....	54,7	8,3	21,9	35,3	48,7	11. 49. 8,31				9,01			11. 49. 30,89			T.
	b Virginis.....	26,2	39,7	53,1	6,8	20,3	33,7	47,2	11. 52. 6,72				7,41			11. 52. 29,29			T.
	(c) Calliope.....	....	....	....	....	....	48,0	....	11. 55. 5,13				5,71			11. 55. 27,60			T.
	Calliope B.....	....	....	2,3	16,6	....	....	....	11. 55. 5,41				5,87			11. 55. 27,76			T.
	(d) B. (w.) XII. 28...	58,0	11,2	24,7	38,2	51,6	4,8	18,3	12. 2. 38,12				38,81			12. 3. 0,70			T.
	B. (w.) XII. 82...	6,7	19,8	33,5	46,8	0,6	13,7	27,1	12. 5. 46,89				47,58			12. 6. 9,48			T.
	(e) H. C. 22986....	36,8	50,6	3,7	17,3	30,7	44,1	57,6	12. 8. 17,27				17,96			12. 8. 39,86			T.
	B. (w.) XII. 200..	45,4	58,7	12,2	25,9	39,4	52,7	6,3	12. 12. 25,80				26,49			12. 12. 48,39			T.
	β Corvi.....	38,2	53,0	7,3	22,0	36,5	51,2	5,7	12. 26. 21,98				22,74	21,95		12. 26. 44,66			T.
	Amphitrite.....	42,3	56,1	9,6	23,5	37,0	50,7	4,0	12. 44. 23,31				23,99			12. 44. 45,92			T.
	Amphitrite B....	12,7	26,1	17,7	31,1	....	....	....	12. 44. 23,52				24,08			12. 44. 46,01			T.
	(f) Polaris SP.....	42,0	25,0	6,0	58,0	42,0	24,0	11,0	13. 4. 55,43				50,44			13. 5. 12,39			T.
	(f) Polaris SP. B....	21,0	12,5	12,0	48,0	....	....	....	....				....			....			T.
	(f) Polaris SP. M....	39,0	17,0	8,0	58,0	37,0	22,0	5,0	13. 4. 54,97				49,98			13. 5. 11,93			T.
	Spica.....	27,7	41,6	55,0	8,9	22,7	36,2	49,7	13. 17. 8,83				9,52	22,02		13. 17. 31,48			T.
Apr. 12	δ Leonis.....	15,1	29,7	43,7	58,5	12,8	27,2	41,7	11. 5. 58,39	-4,2	-1,1	+8,4	58,03		1,40	11. 6. 21,35			T.
	Eunomia.....	45,3	....	13,1	26,7	....	53,8	8,1	11. 12. 26,68				26,58			11. 12. 49,91			T.
	(g) Eunomia B.....	....	....	22,2	35,7	....	....	....	11. 12. 27,02				26,80			11. 12. 50,13			T.
	β Leonis.....	32,8	46,7	0,7	14,7	28,7	42,7	56,4	11. 41. 14,67				14,52	23,38		11. 41. 37,67			T.
	(h) β Corvi.....	37,7	....	....	36,2	50,3	5,2	....	12. 26. 21,39				21,33	23,36		12. 26. 44,73			T.
	(i) Polaris SP.....	1,5	54,0	29,0	23,0	6,5	46,0	33,0	13. 4. 19,00				46,19			13. 5. 9,62			T.
	Polaris SP. M....	10,5	57,0	41,0	23,0	8,0	55,0	39,5	13. 4. 22,18				49,37			13. 5. 12,80			T.
	Spica.....	27,2	40,7	54,7	8,2	22,1	35,4	49,2	13. 17. 8,22				8,10	23,45		13. 17. 31,55			T.
	(k) α Andromedæ...	....	....	....	25,7	41,1	56,2	11,7	0. 0. 25,76				25,38	23,94	1,38	0. 0. 49,41			T.
	(l) Polaris.....	57,0	44,0	26,5	10,5	2,0	42,0	28,0	1. 5. 12,86				46,93			1. 5. 11,02			T.
	(l) Polaris B.....	36,0	23,0	29,0	8,0	....	....	....	....				....			....			T.
	(l) Polaris M.....	54,5	40,5	26,0	10,5	54,5	38,0	22,0	1. 5. 12,11				46,18			1. 5. 10,27			T.
Apr. 13	☉ 1 L.....	47,3	1,2	14,4	28,3	42,3	55,4	9,3	1. 24. 28,32				28,01			1. 24. 52,12			T.
	☉ 2 L.....	56,8	10,7	24,3	37,9	51,8	5,3	18,9	1. 26. 37,96				37,65			1. 27. 1,76			T.
	B. (w.) IX. 1220..	28,3	42,3	56,0	9,8	24,1	37,7	51,7	9. 56. 9,99				9,66			9. 56. 34,26			T.
	Regulus.....	30,7	44,3	58,2	11,8	25,8	39,5	53,2	10. 0. 11,93				11,60	24,63		10. 0. 36,21			T.
	B. (w.) X. 37...	24,7	38,3	51,7	5,3	19,0	32,4	46,0	10. 3. 5,34				5,05			10. 3. 29,66			T.
	B. (w.) X. 110...	0,7	14,7	28,1	41,7	55,2	8,7	22,6	10. 6. 41,67				41,38			10. 7. 5,99			T.
	δ Leonis.....	13,7	28,2	42,3	56,7	11,7	25,7	40,2	11. 5. 56,93				56,57	24,76		11. 6. 21,24			T.
	Eunomia.....	10,8	....	....	52,3	....	19,7	33,6	11. 11. 52,25				52,15			11. 12. 16,82			T.
	Eunomia B.....	41,3	....	47,7	1,3	....	....	....	11. 11. 52,54				52,32			11. 12. 16,99			T.
	Massilia.....	....	57,7	....	....	38,3	51,7	5,0	11. 27. 24,69				24,43			11. 27. 49,12			T.
	Massilia B.....	....	28,2	18,7	32,1	....	....	....	11. 27. 24,69				24,31			11. 27. 49,00			T.
	B. (w.) XI. 566...	31,8	45,6	59,1	12,7	26,3	39,7	53,3	11. 32. 12,64				12,35			11. 32. 37,04			T.
	(m) Bellona B.....	34,2	47,3	40,7	54,2	....	....	....	11. 36. 45,33				44,83			11. 37. 9,53			T.
	β Leonis.....	31,7	45,7	59,3	13,2	27,4	41,3	55,3	11. 41. 13,41				13,06	24,63		11. 41. 37,76			T.
	B. (w.) XI. 797..	29,8	43,4	56,7	10,2	23,7	36,9	50,7	11. 46. 10,20				9,98			11. 46. 34,69			T.
	B. (w.) XI. 850..	29,6	43,2	56,7	10,0	23,7	37,1	50,4	11. 49. 10,10				9,92			11. 49. 34,63			T.

ILLUMINATION EAST. From April 12, WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,327$ ,  $-26^s,895$ ,  $-13^s,656$ ,  $-0^s,010$ ,  $+13^s,633$ ,  $+26^s,905$ ,  $+40^s,349$ . From April 12,  $-40^s,349$ ,  $-26^s,905$ ,  $-13^s,633$ ,  $+0^s,010$ ,  $+13^s,656$ ,  $+26^s,895$ ,  $+40^s,327$ .

(a) Disturbance by noise: the clock scarcely heard at some of the wires.  
B. (w.) XII. 26.

(c) 'Came low in the field with setting  $70^{\circ}.7'$ . The N.P.D. was  $70^{\circ}.2'$ .

(e) 'Only one star.'

(f) Extremely unsteady and diffused: appeared frequently on the wire for  $10^s$ .

(i) 'The star diffused, but pretty good observation.'

(k) Very faint.

(l) 'Beautifully steady.'

(m) Faint, but the observation not doubtful.

(b) The counting being found  $10^s$  fast, the wires and last two bars have been diminished  $10^s$ .

(d) 'One somewhat fainter north-preceding,' viz.

(g) The times have been increased  $1^m$ .

(h) Cloudy.

(j) 'The star diffused, but pretty good observation.'

(k) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Apr. 13	B. (w.) xi. 948...	13,2	26,7	40,2	53,7	7,6	20,9	34,3	11. 54. 53,80	-4,2	-1,1	+8,4	53,65		1,38	11. 55. 18,37			T.
	(a) B. (w.) xi. 994...	2,7	16,0	29,4	42,9	56,7	10,0	23,7	11. 57. 43,06				42,90			11. 58. 7,62			T.
	H. C. 22790.....	26,7	40,3	53,7	7,2	20,8	34,2	47,5	12. 1. 7,20				7,03			12. 1. 31,75			T.
	$\beta$ Corvi.....	36,2	50,7	5,4	19,8	34,7	49,1	3,7	12. 26. 19,95				19,89	24,80		12. 26. 44,64			T.
	(b) Amphitrite.....	52,3	6,1	....	33,7	47,2	0,2	14,2	12. 42. 33,34				33,22			12. 42. 57,98			T.
	Amphitrite B....	23,2	36,7	28,3	41,4	....	....	....	12. 42. 33,61				33,37			12. 42. 58,13			T.
	Polaris SP.....	58,5	52,5	24,0	20,5	11,0	51,0	31,0	13. 4. 18,36				45,55			13. 5. 10,33			T.
	Polaris SP. M....	7,0	52,0	37,0	20,0	4,5	49,0	35,5	13. 4. 18,03				45,22			13. 5. 10,00			T.
Apr. 15	$\delta$ Leonis.....	11,2	25,2	39,7	54,2	9,0	23,1	37,2	11. 5. 54,23				53,87	27,45	1,48	11. 6. 21,46			T.
	(c) Eunomia B.....	36,2	49,4	42,3	55,7	....	....	....	11. 10. 47,12				46,85			11. 11. 14,44			T.
	(d) Massilia.....	48,1	1,3	14,7	....	....	55,7	8,3	11. 26. 28,33				28,07			11. 26. 55,68			T.
	Massilia B.....	18,8	32,0	22,3	35,3	....	....	....	11. 26. 28,30				27,92			11. 26. 55,53			T.
	$\beta$ Leonis.....	28,7	42,3	56,4	10,3	24,5	38,3	52,3	11. 41. 10,40				10,05	27,63		11. 41. 37,67			T.
	$\beta$ Corvi.....	33,4	48,0	2,4	16,7	31,7	46,1	0,7	12. 26. 17,00				16,94	27,75		12. 26. 44,61			T.
	Amphitrite.....	....	18,1	31,3	44,8	....	12,2	25,8	12. 40. 45,04				44,92			12. 41. 12,60			T.
	Amphitrite B....	34,8	48,2	39,8	53,2	....	....	....	12. 40. 45,21				44,97			12. 41. 12,65			T.
	Arcturus.....	....	....	....	33,7	48,4	2,7	17,2	14. 8. 34,03				33,68	27,81		14. 9. 1,45			T.
	Hebe.....	....	22,3	....	....	4,2	....	31,2	14. 17. 50,13				49,83			14. 18. 17,61			T.
	Hebe B.....	39,7	53,6	45,3	58,3	....	....	....	14. 17. 50,44				50,02			14. 18. 17,80			T.
Apr. 17	$\odot$ 2 L.....	....	51,1	4,3	18,7	32,2	45,7	59,4	1. 41. 18,38				18,04		1,57	1. 41. 48,08			T.
	(e) Bellona B.....	....	14,2	7,2	20,6	....	....	....	11. 35. 11,86				11,34			11. 35. 42,03			T.
	$\beta$ Leonis.....	25,7	39,2	53,2	7,2	21,3	34,7	49,3	11. 41. 7,23				6,86	30,82		11. 41. 37,56			T.
	(f) $\beta$ Corvi.....	....	....	59,7	14,0	28,7	43,2	57,7	12. 26. 14,10				13,96	30,73		12. 26. 44,70			T.
	Amphitrite.....	18,6	32,0	45,3	59,0	12,7	26,2	40,2	12. 38. 59,15				58,97			12. 39. 29,73			T.
	(g) Amphitrite B....	49,2	2,4	54,2	7,2	....	....	....	12. 38. 59,46				59,16			12. 39. 29,92			T.
	(h) $\epsilon$ Bootis.....	....	37,3	52,3	7,6	23,0	38,0	53,4	14. 38. 7,68				7,30	30,77		14. 38. 38,19			T.
	$\alpha^2$ Libræ.....	37,1	51,0	5,0	18,7	33,1	46,8	1,1	14. 42. 18,98				18,83	30,92		14. 42. 49,72			T.
Apr. 18	$\odot$ 1 L.....	8,2	21,4	35,2	48,7	2,6	16,5	30,2	1. 42. 48,98				48,63		1,52	1. 43. 20,23			T.
	$\odot$ 2 L.....	18,2	31,7	45,3	59,1	13,1	26,7	40,7	1. 44. 59,26				58,91			1. 45. 30,56			T.
	$\delta$ Leonis.....	6,2	20,3	35,1	49,3	4,2	18,2	33,0	11. 5. 49,48				49,11	32,18		11. 6. 21,35			T.
	Eunomia.....	....	....	....	17,7	....	....	....	11. 9. 17,77				17,60			11. 9. 49,84			T.
	(k) Eunomia B.....	....	....	13,3	26,6	....	....	....	11. 9. 18,14				17,85			11. 9. 50,09			T.
	Massilia.....	35,2	48,4	2,1	15,3	29,0	42,2	55,8	11. 25. 15,43				15,14			11. 25. 47,40			T.
	(l) Massilia B.....	....	....	10,1	23,3	....	....	....	11. 25. 16,00				15,59			11. 25. 47,85			T.
	$\beta$ Leonis.....	24,0	37,8	51,7	5,7	19,7	33,7	47,4	11. 41. 5,71				5,35	32,32		11. 41. 37,63			T.
	(m) $\beta$ Corvi.....	....	....	57,8	12,3	27,2	41,7	56,2	12. 26. 12,48				12,34	32,35		12. 26. 44,67			T.
	Amphitrite.....	27,2	40,4	53,7	7,2	21,5	34,5	47,7	12. 38. 7,46				7,28			12. 38. 39,62			T.
	(n) Amphitrite B....	57,3	10,6	2,2	15,3	....	....	....	12. 38. 7,56				7,26			12. 38. 39,60			T.
	Spica.....	....	31,9	45,3	59,3	13,1	26,5	40,3	13. 16. 59,24				59,06	32,52		13. 17. 31,44			T.
	Arcturus.....	46,7	1,2	15,2	29,4	44,2	58,2	12,4	14. 8. 29,62				29,25	32,26		14. 9. 1,69			T.
	Hebe.....	....	....	....	....	25,3	38,7	52,9	14. 15. 11,73				11,40			14. 15. 43,84			T.
	Hebe B.....	....	....	6,3	20,1	....	....	....	14. 15. 11,90				11,45			14. 15. 43,89			T.
Apr. 19	$\beta$ Corvi.....	27,4	41,7	56,3	11,1	25,7	40,2	54,7	12. 26. 11,01				10,87	33,82	1,47	12. 26. 44,67			T.
	Amphitrite.....	36,2	49,5	3,3	16,5	30,8	44,2	57,4	12. 37. 16,84				16,66			12. 37. 50,47			T.
	Amphitrite B....	6,5	20,2	11,5	24,8	....	....	....	12. 37. 16,96				16,66			12. 37. 50,47			T.
	Spica.....	16,7	30,7	44,2	57,7	11,7	25,2	38,8	13. 16. 57,86				57,68	33,91		13. 17. 31,53			T.
	Arcturus.....	45,2	59,3	13,6	27,8	42,7	56,7	11,2	14. 8. 28,07				27,70	33,82		14. 9. 1,61			T.
	(o) Hebe.....	....	51,3	4,7	18,5	....	45,8	59,3	14. 14. 18,51				18,18			14. 14. 52,09			T.
	Hebe B.....	8,2	21,7	13,7	....	....	....	....	14. 14. 18,80				18,35			14. 14. 52,26			T.
	Polaris.....	....	....	....	58,0	51,0	32,0	17,0	1. 5. 1,57				39,27						T.
Apr. 20	$\odot$ 1 L.....	31,3	45,1	58,7	12,4	26,4	40,0	53,3	1. 50. 12,46				12,12			1. 50. 46,74			T.
	$\odot$ 2 L.....	41,5	55,2	9,2	22,8	36,8	50,2	4,0	1. 52. 22,81				22,47			1. 52. 57,09			T.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) 'The north-preceding and brighter of two,' the other being B. (w.) xi. 995. (b) Observed doubtfully at the wires on account of its faintness.  
(c) A south-following object was also observed. (d) 'Easily observed.' Another very faint object of somewhat greater N.P.D. was noticed, which was taken for the Planet by the Circle observer. (e) 'Extremely faint: nothing very near this.' (f) Delay by wrong setting. (g) 'Good, the Planet being bright.' The last two wires and last two bars have been diminished 10<sup>s</sup>. (h) Diffused. (i) Disturbance at 1 L, the other observed satisfactorily. (k) Assumed to be taken at wire IV, the wire not being noted. (l) 'Preceding two brighter objects.' (m) Faint. (n) 'Alone.' (o) 'One somewhat fainter south-following.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Apr. 24	(a) Eunomia.....	....	30,4	....	....	....	....	....	11. 6. 57,79	-4,2	-1,7	+7,0	57,58		1,23	11. 7. 36,48			T.
	Eunomia B.....	....	....	53,3	6,7	....	....	....	11. 6. 58,30				57,97			11. 7. 36,87			T.
	Massilia B.....	....	41,8	32,7	45,6	....	....	....	11. 23. 38,37				37,85			11. 24. 16,76			T.
	β Leonis.....	17,2	31,2	45,2	59,1	13,3	26,8	40,9	11. 40. 59,10				58,66	38,98					T.
	Spica.....	....	25,7	39,2	53,0	6,4	20,2	33,7	13. 16. 52,87				52,65	38,96					T.
Apr. 29	(b) β Leonis.....	10,1	23,8	37,8	51,7	5,9	19,6	33,7	11. 40. 51,80		-0,2	+10,1	51,57	46,04	1,43				B.
	(c) B. (w.) XII. 730..	31,0	45,2	58,7	11,7	25,1	38,8	52,4	12. 42. 11,84				11,83			12. 42. 57,99			B.
	B. (w.) XII. 829..	3,2	16,7	29,8	43,4	57,1	10,4	23,8	12. 47. 43,48				43,39			12. 48. 29,55			B.
	Spica.....	4,4	17,9	31,6	45,2	59,3	12,8	26,4	13. 16. 45,37				45,38	46,24					B.
May 2	δ Leonis.....	47,8	2,1	16,6	30,9	45,8	0,0	14,3	11. 5. 31,07				30,83	50,34	1,46	11. 6. 21,17			B.
	(d) β Leonis.....	5,7	19,5	33,4	47,3	1,7	15,3	29,3	11. 40. 47,46				47,23	50,36		11. 41. 37,60			B.
	(e)(f) B. (w.) XI. 897.	....	59,7	....	27,3	41,8	....	7,3	11. 51. 27,28				27,23			11. 52. 17,61			B.
	(e) B.A.C. 4063.....	37,2	51,0	4,3	17,7	31,0	44,7	58,3	11. 55. 17,75				17,73			11. 56. 8,12			B.
	(g) B. (w.) XI. 1030..	13,6	27,1	40,4	54,1	7,8	21,0	34,6	11. 59. 54,09				54,04			12. 0. 44,44			B.
	(h) B.A.C. 4201.....	....	9,7	23,1	36,4	50,3	3,6	....	12. 19. 36,63				36,64			12. 20. 27,06			B.
	(c)(i) B. (w.) XII. 388.	10,8	24,2	37,4	50,8	4,7	18,4	31,3	12. 22. 51,08				51,01			12. 23. 41,43			B.
	(k) Amphitrite.....	....	....	....	....	....	26,2	39,3	12. 27. 58,87				58,86			12. 28. 49,29			B.
	(k) Amphitrite B.....	....	....	53,6	6,8	....	....	....	12. 27. 59,10				58,89			12. 28. 49,32			B.
	B. (w.) XII. 599..	24,1	37,6	51,0	4,3	18,2	31,3	45,0	12. 35. 4,50				4,44			12. 35. 54,88			B.
	B.A.C. 4294.....	30,9	44,3	57,9	11,3	25,1	38,5	52,0	12. 39. 11,43				11,42			12. 40. 1,86			B.
	(l) B. (w.) XII. 829..	58,6	12,1	25,7	....	....	5,7	20,0	12. 47. 39,12				39,03			12. 48. 29,48			B.
	B. (w.) XII. 882..	21,6	34,8	48,3	2,2	15,6	28,8	42,3	12. 51. 1,94				1,90			12. 51. 52,35			B.
	(m) Spica.....	0,0	13,8	27,4	40,8	54,8	8,4	22,2	13. 16. 41,05				41,06	50,56		13. 17. 31,54			B.
	(n) Hebe.....	....	....	27,3	40,7	54,4	8,3	21,8	14. 2. 40,86				40,67			14. 3. 31,20			B.
	Arcturus.....	28,3	42,6	57,0	11,3	25,3	39,9	54,0	14. 8. 11,27				11,03	50,57		14. 9. 1,56			B.
	ε Bootis.....	2,5	17,6	32,8	48,1	3,3	18,2	33,3	14. 37. 47,97				47,70	50,52		14. 38. 38,26			B.
	α <sup>2</sup> Libræ.....	17,6	31,4	45,2	59,1	13,3	27,1	41,2	14. 41. 59,28				59,33	50,61		14. 42. 49,90			B.
	α Coronæ.....	56,2	11,4	26,4	41,7	57,0	11,9	27,1	15. 27. 41,67				41,41	50,56		15. 28. 32,02			B.
May 3	(o) Spica.....	58,8	12,3	25,8	39,6	53,6	7,0	20,7	13. 16. 39,69				39,70	51,92	1,57				B.
	(e)(p) B. (w.) XIII. 402	8,3	21,8	35,8	49,6	3,5	16,8	30,9	13. 23. 49,53				49,56			13. 24. 41,52			B.
	B. (w.) XIII. 520.	8,3	22,2	36,0	49,8	3,8	17,4	31,2	13. 29. 49,82				49,85			13. 30. 41,81			B.
	B. (w.) XIII. 573.	8,1	21,7	35,1	49,1	2,6	16,2	30,0	13. 32. 48,98				49,00			13. 33. 40,97			B.
	B. (w.) XIII. 773.	3,9	17,3	30,6	44,3	58,2	11,5	25,2	13. 44. 44,43				44,42			13. 45. 36,40			B.
	(l) B. (w.) XIII. 845.	35,7	49,7	2,7	....	30,6	....	58,3	13. 48. 16,84				16,86			13. 49. 8,84			B.
	(q) B. (w.) XIII. 917.	54,2	7,7	21,2	34,7	48,6	2,1	....	13. 52. 34,35				34,84			13. 53. 26,83			B.
	(r) Hebe.....	....	....	....	....	3,2	....	....	14. 1. 49,42				49,23			14. 2. 41,23			B.
	Hebe B.....	....	....	44,1	57,3	....	....	....	14. 1. 49,16				48,77			14. 2. 40,77			B.
	Arcturus.....	27,0	41,1	55,6	9,7	24,2	38,3	52,8	14. 8. 9,82				9,58	52,03					B.
May 4	(s) ⊙ 1 L.....	7,4	21,4	35,5	49,6	3,7	17,5	31,6	2. 42. 49,53				49,31		1,58	2. 43. 42,23			B.
	⊙ 2 L.....	19,9	33,9	47,8	1,7	15,8	29,9	43,8	2. 45. 1,82				1,60			2. 45. 54,52			B.
	(e) Aldebaran.....	....	....	....	38,7	52,8	6,7	20,7	4. 26. 38,71				38,49	53,08		4. 27. 31,52			B.
	Regulus.....	1,4	15,2	28,9	42,7	56,7	10,4	24,1	9. 59. 42,77				42,57	53,40		10. 0. 35,97			B.
	δ Leonis.....	44,7	59,2	13,3	27,8	42,3	56,7	11,1	11. 5. 27,87				27,63	53,52		11. 6. 21,10			B.
	Amphitrite.....	....	24,8	38,1	51,8	5,4	18,9	....	12. 26. 51,81				51,76			12. 27. 45,32			B.
	Hebe.....	16,2	29,7	43,2	56,9	11,1	24,4	37,5	14. 0. 57,00				56,81			14. 1. 50,47			B.
	Arcturus.....	25,2	39,6	53,9	8,0	22,8	36,8	51,2	14. 8. 8,22				7,98	53,63		14. 9. 1,65			B.
	ε Bootis.....	59,3	14,6	29,8	44,8	0,0	15,3	30,6	14. 37. 44,91				44,64	53,59		14. 38. 38,34			B.
	α <sup>2</sup> Libræ.....	14,2	28,3	42,2	55,9	10,2	24,2	38,0	14. 41. 56,14				56,19	53,76		14. 42. 49,90			B.
	(t) B. (w.) XIV. 909..	54,2	7,4	21,2	35,1	49,1	2,8	16,4	14. 47. 35,17				35,20			14. 48. 28,90			B.
	α Andromedæ...	9,9	25,2	40,3	55,8	11,2	26,1	41,6	23. 59. 55,73				55,46	54,34	1,45	0. 0. 49,74			B.
	(u) Polaris.....	39,0	23,5	3,0	48,0	....	18,0	6,5	1. 4. 51,16				24,50						B.
May 5	⊙ 1 L.....	....	10,6	24,7	38,7	52,8	6,7	20,8	2. 46. 38,70				38,48			2. 47. 32,93			B.
	⊙ 2 L.....	9,1	23,2	37,2	51,3	5,3	19,2	33,3	2. 48. 51,22				51,00			2. 49. 45,45			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,349, -26°,905, -13°,633, +0°,010, +13°,656, +26°,895, +40°,327.

(a) Extremely faint. (b) Misty sky. (c) Very faint. (d) The sky overcast. (e) Cloudy. (f) Very doubtful observation.  
 (g) 'One south-following.' (h) Disappearing. (i) 'One southward.' (k) A preceding object was also observed. (l) Very faint at intervals.  
 (m) Corrected by -1". (n) Faint from cloud. The omitted wires in the memorandum book are I and VII, and it is therefore doubtful whether this object be the Planet. (o) The sky had just become clear. (p) 'H. C. 25008 not seen.' A following star, viz. B. (w.) XIII. 404, was noticed.  
 (q) Cloud at wire VII. (r) Clouded. 'The preceding of two.' (s) Badly defined and tremulous. (t) 'Another north-preceding,' viz. B. (w.) XIV. 896.  
 (u) Tremor: cloud at wire V.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h. m. s.	
May 5	(a) $\delta$ Leonis .....	43,2	57,4	11,9	26,4	40,5	54,6	9,0	11. 5. 26,14	-4,2	-0,2	+10,1	25,90	(55,24)	1,45	11. 6. 20,85	B.
	Amphitrite .....	39,2	52,8	7,0	20,6	34,2	47,7	1,3	12. 26. 20,40				20,39			12. 27. 15,42	B.
	Hebe .....	24,7	38,2	51,8	5,8	19,6	32,9	46,4	14. 0. 5,63				5,44			14. 1. 0,57	B.
	(b) Hebe B. ....	55,2	8,8	0,8	14,2	....	....	....	14. 0. 5,97				5,58			14. 1. 0,71	B.
	(c) Arcturus .....	23,8	38,3	52,4	6,6	21,2	35,4	49,7	14. 8. 6,77				6,53	55,08		14. 9. 1,67	B.
	$\epsilon$ Bootis .....	....	13,1	28,2	43,3	58,6	13,7	....	14. 37. 43,39				43,12	55,11		14. 38. 38,29	B.
	$\alpha^2$ Libræ .....	12,8	26,7	40,8	54,7	8,7	22,7	36,4	14. 41. 54,69				54,74	55,22		14. 42. 49,91	B.
	B. (w.) XIV. 909..	....	6,3	19,7	33,7	47,4	1,3	....	14. 47. 33,69				33,72			14. 48. 28,89	B.
May 6	(d) $\odot$ 1 L. ....	46,3	0,3	14,3	28,4	42,6	56,6	10,8	2. 50. 28,48				28,21		1,35	2. 51. 23,90	B.
	(e) $\delta$ Leonis .....	....	57,0	11,4	25,1	39,3	53,8	8,2	11. 5. 25,26				24,97	56,15			B.
May 8	(f) $\odot$ 1 L. ....	27,3	41,5	55,3	9,5	23,9	37,8	52,0	2. 58. 9,62				9,35		1,56	2. 59. 8,28	B.
	$\odot$ 2 L. ....	40,3	54,4	8,4	22,7	....	....	....	3. 0. 22,64				22,37			3. 1. 21,31	B.
	Hebe .....	....	....	....	....	49,7	3,8	18,0	13. 57. 36,46				36,22			13. 58. 35,87	B.
	(g) Hebe B. ....	....	....	32,0	46,2	....	....	....	13. 57. 37,50				37,06			13. 58. 36,71	B.
	Arcturus .....	19,3	33,6	48,0	2,2	16,7	30,8	45,2	14. 8. 2,25				1,96	59,66		14. 9. 1,62	B.
	$\epsilon$ Bootis .....	53,1	8,4	23,8	38,8	54,1	9,3	24,3	14. 37. 38,83				38,51	59,74		14. 38. 38,20	B.
	$\alpha^2$ Libræ .....	8,3	22,2	36,2	50,2	4,3	18,2	32,0	14. 41. 50,20				50,22	59,77		14. 42. 49,92	B.
	$\alpha$ Serpentis .....	26,1	39,6	53,2	6,7	20,3	33,8	47,4	15. 36. 6,73				6,52	59,65		15. 37. 6,28	B.
	$\delta$ Ophiuchi .....	3,3	16,7	29,9	43,6	57,3	10,4	24,0	16. 5. 43,60				43,51	59,79		16. 6. 43,30	B.
	$\odot$ 1 L. ....	18,7	32,7	46,8	0,9	15,3	29,2	43,4	3. 2. 1,00				0,73		1,54	3. 3. 1,25	B.
May 9	$\odot$ 2 L. ....	32,0	46,0	0,3	14,2	28,6	42,5	56,4	3. 4. 14,29				14,02			3. 5. 14,54	B.
	(h) $\beta$ Leonis .....	54,8	8,7	22,8	36,5	50,8	4,5	18,7	11. 40. 36,69				36,41	61,12		11. 41. 37,48	B.
	Spica .....	....	3,3	16,6	30,4	44,2	57,8	....	13. 16. 30,47				30,45	61,18		13. 17. 31,62	B.
	(i) Hebe .....	6,1	....	33,1	47,3	1,3	....	28,2	13. 56. 47,19				46,95			13. 57. 48,17	B.
	B.A.C. 4697 .....	....	12,8	26,3	40,2	54,0	7,6	....	13. 59. 40,19				40,18			14. 0. 41,40	B.
	H. C. 25983 .....	37,9	51,9	5,3	18,9	32,8	46,6	0,4	14. 2. 19,12				19,12			14. 3. 20,34	B.
	Arcturus .....	17,7	32,3	46,3	0,7	15,2	29,3	43,7	14. 8. 0,74				0,45	61,17		14. 9. 1,68	B.
	H. C. 26214 .....	9,7	23,6	37,6	51,6	6,0	19,8	34,0	14. 11. 51,75				51,79			14. 12. 53,02	B.
	H. C. 26306 .....	59,5	13,3	27,2	40,8	55,2	8,6	22,6	14. 15. 41,02				41,03			14. 16. 42,27	B.
	H. C. 26410 .....	57,2	11,2	25,2	39,2	53,3	7,1	21,2	14. 19. 39,20				39,23			14. 20. 40,47	B.
	H. C. 26504 .....	34,2	48,2	2,0	16,0	30,6	44,7	58,7	14. 23. 16,34				16,38			14. 24. 17,62	B.
	B. (w.) XIV. 512..	40,3	54,0	8,1	21,7	35,6	49,0	3,2	14. 27. 21,70				21,70			14. 28. 22,95	B.
	B. (w.) XIV. 578..	1,2	15,3	28,7	43,1	56,8	10,4	24,4	14. 30. 42,84				42,84			14. 31. 44,09	B.
	H. C. 26821 .....	41,6	54,8	9,1	23,0	37,3	51,1	5,3	14. 35. 23,17				23,20			14. 36. 24,46	B.
	$\epsilon$ Bootis .....	52,1	7,0	21,8	37,3	52,8	7,6	23,0	14. 37. 37,37				37,05	61,21		14. 38. 38,31	B.
	$\alpha^2$ Libræ .....	7,0	20,8	34,6	48,6	2,6	16,6	30,3	14. 41. 48,65				48,67	61,32		14. 42. 49,93	B.
May 10	(k) $\odot$ 2 L. ....	24,0	38,2	52,1	6,4	20,7	34,6	48,7	3. 8. 6,39				6,12		1,55	3. 9. 8,15	B.
	(h) Aldebaran .....	47,7	1,8	15,7	29,6	43,8	57,3	11,4	4. 26. 29,62				29,35	62,23		4. 27. 31,47	B.
	Regulus .....	52,4	6,1	19,9	33,8	47,8	1,3	15,2	9. 59. 33,78				33,53	62,37		10. 0. 36,01	B.
	$\beta$ Leonis .....	53,4	7,3	21,2	35,2	49,2	3,2	17,2	11. 40. 35,24				34,96	62,56		11. 41. 37,55	B.
	B.A.C. 4201 .....	43,9	57,3	10,7	24,4	38,2	51,6	5,3	12. 19. 24,49				24,46			12. 20. 27,09	B.
	(l) Amphitrite B ...	54,4	8,3	59,7	13,2	....	....	....	12. 24. 5,11				4,80			12. 25. 7,43	B.
May 11	Regulus .....	50,8	4,8	18,2	32,0	46,1	59,7	13,6	9. 59. 32,17				31,92	63,97	1,62	10. 0. 35,99	B.
	$\alpha^2$ Libræ .....	3,9	17,3	31,4	45,4	59,6	13,3	27,3	14. 41. 45,46				45,48	64,53		14. 42. 49,86	B.
	(h) $\alpha$ Serpentis .....	21,4	34,9	48,3	1,9	15,8	29,1	42,7	15. 36. 2,01				1,80	64,41		15. 37. 6,24	B.
May 12	(m) Polaris .....	....	16,5	58,5	41,5	33,0	....	58,0	1. 4. 44,31				17,17				B.
	$\odot$ 1 L. ....	55,8	10,3	24,2	38,4	52,8	6,9	21,0	3. 13. 38,49				38,22			3. 14. 43,45	B.
May 13	$\odot$ 2 L. ....	9,6	23,6	37,7	52,3	6,7	20,6	34,7	3. 15. 52,17				51,90			3. 16. 57,13	B.
	(n) Amphitrite .....	....	....	....	1,7	....	....	....	12. 23. 1,77			+8,1	1,61		1,61	12. 24. 9,15	B.
	Amphitrite B. ...	51,3	4,8	55,2	8,8	....	....	....	12. 23. 1,24				0,88			12. 24. 8,42	B.
May 13	(o) $\epsilon$ Bootis .....	45,6	0,7	15,6	31,0	46,3	1,2	16,6	14. 37. 31,00				30,62	67,65		14. 38. 38,31	B.
	$\alpha$ Coronæ .....	....	53,9	9,6	24,6	40,2	54,8	10,3	15. 27. 24,68				24,30	67,78		15. 28. 32,05	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.349, -26<sup>s</sup>.905, -13<sup>s</sup>.633, +0<sup>s</sup>.010, +13<sup>s</sup>.656, +26<sup>s</sup>.895, +40<sup>s</sup>.327.

(a) Blazing. Wire IV was set down 25,4; the observation being discordant is not used for clock-error. (b) Faint. The observer's eye was fatigued by making drawings of a Lunar crater the two preceding hours. (c) Very indefinite. (d) Clouded; taken without a dark glass. (e) 'The clouds had just cleared off.' The clock-error by this observation is discordant. (f) Raining; 2 L. extremely faint. (g) Faint from moon-light and occasionally disappearing from clouds. Great difference between the wire and bar observations. (h) Cloudy. (i) 'Good.' (k) 1 L. hid by cloud. (l) Very faint from cloud and moon-light. (m) Tremor. (n) Very faint. (o) Faint at times.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
May 13	(a) $\alpha$ Serpentis.....	17,8	31,8	45,3	58,8	12,3	26,0	39,3	15.35.58,76	-4,2	-0,5	+8,1	58,46	67,77	1,61	15.37.6,22			B.
May 14	(b) Polaris.....	....	....	54,0	36,5	....	1,0	53,8	1.4.38,16	-4,2	-0,4		14,16		1,49				B.
May 15	(c) $\odot$ 2 L.....	52,8	6,8	20,9	35,2	49,6	3,9	18,2	3.27.35,34				35,02			3.28.45,24			B.
	$\beta$ Leonis.....	....	....	13,2	27,2	41,3	55,1	9,2	11.40.27,26				26,94	70,53		11.41.37,67			B.
	B. (w.) xiv. 78...	43,4	57,1	10,6	24,1	37,8	51,2	5,0	14.4.24,17				24,05			14.5.34,93			B.
	Arcturus.....	8,3	22,7	36,8	51,2	5,7	19,7	34,2	14.7.51,22				50,90	70,73		14.9.1,78			B.
	B. (w.) xv. 383..	1,3	14,8	28,4	42,3	56,3	9,9	24,0	15.19.42,43				42,33			15.20.53,28			B.
	B. (w.) xv. 438..	18,1	32,7	....	0,1	14,7	28,6	42,3	15.23.0,44				0,34			15.24.11,30			B.
	$\alpha$ Coronæ.....	36,2	51,3	6,3	21,5	36,9	51,7	7,0	15.27.21,55				21,21	70,89		15.28.32,17			B.
	(d) B. (w.) xv. 597..	51,1	4,6	18,4	32,1	46,3	0,2	13,9	15.30.32,37				32,28			15.31.43,24			B.
	$\alpha$ Serpentis.....	15,0	28,3	42,2	55,6	9,2	22,6	36,3	15.35.55,60				55,33	70,92		15.37.6,30			B.
	(e) H. C. 28813.....	37,3	....	6,3	....	35,2	....	4,3	15.41.20,75				20,69			15.42.31,67			B.
	47 Libræ.....	42,4	56,6	11,0	25,2	39,4	53,6	7,7	15.45.25,13				25,06			15.46.36,04			B.
	(f) H. C. 29044...	47,8	1,7	15,9	30,2	44,6	58,8	13,2	15.49.30,31				30,25			15.50.41,23			B.
	H. C. 29136.....	11,7	26,7	41,6	56,6	11,3	25,6	40,6	15.52.56,30				56,24			15.54.7,23			B.
	H. C. 29296.....	44,5	58,3	12,3	26,4	40,6	54,3	8,2	15.57.26,37				26,30			15.58.37,29			B.
	(g) H. C. 29425.....	19,1	33,3	47,6	2,6	17,3	31,5	46,2	16.1.2,51				2,45			16.2.13,45			B.
	$\delta$ Ophiuchi.....	52,3	5,6	18,8	32,4	46,2	59,4	12,6	16.5.32,47				32,30	71,10		16.6.43,30			B.
	$\beta$ Leonis.....	....	57,7	11,7	25,6	39,8	53,6	....	11.40.25,69			+9,1	25,41	72,05	1,48	11.41.37,51			B.
	(h) B. (w.) xiii. 1024	14,3	28,3	42,1	55,7	9,6	23,3	36,9	13.56.55,74				55,71			13.58.7,95			B.
	B. (w.) xiv. 9....	10,2	23,6	37,2	50,6	4,3	18,2	31,3	14.0.50,77				50,69			14.2.2,94			B.
	B. (w.) xiv. 67...	10,6	24,1	37,9	51,8	5,9	19,4	33,3	14.3.51,85				51,81			14.5.4,06			B.
	Arcturus.....	6,8	21,2	35,3	49,6	4,3	18,1	32,7	14.7.49,72				49,43	72,21		14.9.1,68			B.
	(i) H. C. 26214.....	59,0	12,9	27,0	40,9	55,1	8,9	23,1	14.11.40,98				40,98			14.12.53,24			B.
	(k) H. C. 26306.....	48,6	2,3	16,4	30,2	44,2	57,8	11,8	14.15.30,18				30,15			14.16.42,41			B.
	B. (w.) xiv. 346..	32,8	46,8	0,6	14,6	28,6	42,0	56,4	14.18.14,54				14,52			14.19.26,78			B.
	B. (w.) xiv. 410..	58,2	....	25,7	39,7	53,3	7,1	20,9	14.21.39,55				39,51			14.22.51,78			B.
	(l) B. (w.) xiv. 477..	41,1	54,9	8,2	22,2	35,8	49,4	3,2	14.25.22,11				22,06			14.26.34,33			B.
	(a) $\epsilon$ Bootis.....	41,0	55,9	11,0	26,2	41,7	56,4	11,7	14.37.26,27				25,96	72,32		14.38.38,24			B.
	$\alpha^s$ Libræ.....	55,9	9,7	23,9	37,5	51,8	5,6	19,7	14.41.37,73				37,71	72,33		14.42.50,00			B.
	(m) Polaris.....	....	11,0	48,5	....	....	8,5	48,5	1.4.37,47				11,93		1,44	1.5.24,90			B.
May 17	$\odot$ 1 L.....	28,6	43,7	58,2	12,3	26,8	41,0	55,5	3.33.12,30				12,02			3.34.25,13			B.
	$\odot$ 2 L....	44,2	58,6	12,9	27,2	41,2	55,8	9,8	3.35.27,10				26,82			3.36.39,94			B.
	(m) Rigel.....	36,6	50,0	3,4	17,0	31,3	44,4	58,0	5.6.17,25				17,19	73,13					B.
	$\delta$ Ophiuchi.....	49,2	2,4	16,0	29,4	43,4	56,6	10,2	16.5.29,60				29,48	73,95					B.
May 18	$\beta$ Corvi.....	45,7	0,4	14,9	29,5	44,3	58,6	13,2	12.25.29,52				29,53	75,04	1,43	12.26.44,54			B.
	Arcturus.....	4,2	18,2	32,5	46,8	1,3	15,3	29,8	14.7.46,87				46,58	75,06		14.9.1,69			B.
	H. C. 27288.....	....	26,8	40,7	55,2	9,4	23,3	....	14.50.55,09				55,08			14.52.10,24			B.
	(n) B. (w.) xiv. 1040.	5,8	19,7	33,6	47,2	1,4	14,7	28,8	14.54.47,32				47,28			14.56.2,44			B.
	B. (w.) xiv. 1114	23,9	37,5	51,7	5,3	19,4	33,4	47,2	14.58.5,49				5,47			14.59.20,63			B.
	(o) H. C. 27606.....	42,6	57,2	11,6	26,0	40,6	55,3	9,6	15.1.26,13				26,14			15.2.41,31			B.
	B. (w.) xv. 85...	4,6	18,7	32,7	46,6	0,4	14,2	27,4	15.4.46,37				46,33			15.6.1,50			B.
	(p) B. (w.) xv. 158..	40,2	....	7,4	22,3	36,3	....	3,6	15.8.21,95				21,93			15.9.37,10			B.
	(q) $\alpha$ Coronæ.....	32,0	47,2	2,0	17,0	32,4	47,4	2,4	15.27.17,20				16,89	75,23		15.28.32,08			B.
	(r) $\alpha$ Serpentis.....	10,9	24,3	37,9	51,2	4,9	18,3	31,7	15.35.51,31				51,09	75,18		15.37.6,29			B.
	(s) Polaris SP.....	....	17,5	54,5	46,5	31,0	13,5	....	13.3.42,92				9,86		1,48	13.5.26,40			B.
	Spica.....	34,2	47,8	1,3	15,2	28,7	42,4	56,2	13.16.15,11				15,06	76,55					B.
May 19	H. C. 25052.....	....	12,3	25,7	39,6	53,4	6,7	....	13.24.39,55				39,46			13.25.56,02			B.
	(t) B. (w.) xiii. 494.	....	31,0	44,2	57,3	12,3	25,7	....	13.27.58,11				58,06			13.29.14,62			B.
	(u) B. (w.) xiii. 546.	....	59,2	13,1	26,3	40,2	53,8	....	13.30.26,53				26,47			13.31.43,03			B.
	Arcturus.....	2,5	16,7	31,0	45,2	59,8	13,9	28,2	14.7.45,33				45,04	76,60					B.
	(x) Polaris.....	....	....	48,5	31,5	25,0	....	49,5	1.4.35,10				9,56			1.5.26,84			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,308, -26°,907, -13°,520, -0°,067, +13°,579, +26°,870, +40°,353.

(a) Blazing. (b) Cloud passing. (c) 1 L hid by cloud. (d) 'Oblong.' (e) Cloudy. (f) 'Another north-preceding,' which appears to be H. C. 29043. (g) 'A brighter north-preceding.' (h) 'A small companion north-following.' (i) 'One south-preceding,' viz. H. C. 26199. (k) 'One south-preceding,' viz. H. C. 26304. (l) 'Seen with difficulty.' (m) Very tremulous. (n) 'Difficult to observe, so faint: a smaller south-following.' (o) 'One of Mag. 10 north-preceding.' (p) Very faint. (q) No definition. (r) Great motion. (s) Very steady. (t) 'Low in the field.' (u) Hazy. (x) Faint from haze, but steady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
May 23	(a)(b) ☉ 1 L. ....	18,4	....	....	1,0	16,2	29,8	44,4	3. 57. 1,30	-4,2	-0,7	+9,1	0,98		1,46	3. 58. 22,71	B.		
	☉ 2 L. ....	33,4	47,8	2,2	16,4	31,1	45,2	59,6	3. 59. 16,53				16,21			4. 0. 37,94	B.		
	(a) α Orionis .....	....	26,2	39,8	53,4	7,2	20,7	34,2	5. 45. 53,47				53,22	81,90		5. 47. 15,06	B.		
	β Leonis .....	33,6	47,6	1,4	15,3	29,6	43,2	57,4	11. 40. 15,44				15,14	82,26		11. 41. 37,34	B.		
	β Corvi .....	....	53,2	7,6	22,1	36,9	51,3	6,0	12. 25. 22,24				22,24	82,29		12. 26. 44,49	B.		
	α Herculis .....	57,2	11,1	25,1	38,9	53,1	6,8	20,6	17. 6. 38,98				38,69	82,39		17. 8. 1,22	B.		
May 25	☉ 1 L. ....	18,3	32,9	47,2	1,8	16,2	30,8	45,2	4. 5. 1,77				1,46		1,42	4. 6. 26,15	B.		
	☉ 2 L. ....	34,2	48,6	3,0	17,4	32,1	46,2	1,0	4. 7. 17,50				17,19			4. 8. 41,89	B.		
	Procyon .....	33,7	47,2	0,6	14,0	27,8	41,2	54,7	7. 30. 14,17				13,94	84,91		7. 31. 58,84	B.		
	(c) Pollux .....	....	....	....	....	12,6	28,0	43,1	7. 34. 57,29				56,95	84,89		7. 36. 21,85	B.		
	β Leonis .....	30,7	44,6	58,6	12,7	26,5	40,5	54,5	11. 40. 12,58				12,28	85,09		11. 41. 37,42	C.		
	(d) α Virginis .....	41,4	54,9	8,6	22,3	35,9	49,6	3,0	11. 56. 22,24				21,98			11. 57. 47,14	C.		
	B. (w.) XIII. 120. ....	7,2	20,7	34,8	48,1	1,9	15,8	29,6	13. 6. 48,30				48,26			13. 8. 13,49	B.		
	B. (w.) XIII. 174. ....	53,8	7,4	20,9	34,2	48,2	1,3	14,9	13. 9. 34,39				34,29			13. 10. 59,52	B.		
	B. (w.) XIII. 234. ....	....	38,2	51,5	4,9	18,6	32,2	....	13. 13. 5,09				5,02			13. 14. 30,25	B.		
	Spica .....	25,5	39,2	52,6	6,4	20,2	33,6	47,4	13. 16. 6,42				6,36	85,22		13. 17. 31,60	B.		
	Arcturus .....	53,8	7,8	22,3	36,6	51,1	5,4	19,6	14. 7. 36,66				36,35	85,28		14. 9. 1,64	B.		
	H. C. 26413. ....	36,7	50,7	4,6	18,8	33,2	47,0	1,2	14. 19. 18,89				18,87			14. 20. 44,17	B.		
	H. C. 26504. ....	10,2	24,1	38,2	52,3	6,6	20,3	34,5	14. 22. 52,31				52,30			14. 24. 17,60	B.		
	(e) B. (w.) XIV. 512. ....	16,2	29,8	43,8	57,6	11,6	....	39,2	14. 26. 57,63				57,59			14. 28. 22,90	B.		
	B. (w.) XIV. 578. ....	37,2	51,2	4,8	18,6	32,6	46,3	0,0	14. 30. 18,63				18,64			14. 31. 43,95	B.		
	(f) ε Bootis .....	27,6	43,2	58,0	13,3	28,7	43,8	59,0	14. 37. 13,37				13,04	85,25		14. 38. 38,36	B.		
	α <sup>2</sup> Libræ .....	42,8	56,6	10,7	24,4	38,7	52,6	6,6	14. 41. 24,63				24,60	85,48		14. 42. 49,92	B.		
	(g) B. (w.) XIV. 1016. ....	....	31,6	45,2	59,2	12,8	26,6	....	14. 52. 59,09				59,04			14. 54. 24,37	B.		
	B. (w.) XIV. 1099. ....	29,2	43,0	56,6	10,2	24,3	37,8	51,6	14. 57. 10,38				10,34			14. 58. 35,68	B.		
	H. C. 27567. ....	21,3	35,6	49,8	4,2	18,7	32,9	47,2	15. 0. 4,24				4,24			15. 1. 29,58	B.		
	(h) H. C. 28009. ....	4,2	17,8	31,6	45,6	59,5	13,3	27,2	15. 13. 45,60				45,56			15. 15. 10,91	B.		
	May 26	(i) ☉ 1 L. ....	19,5	33,8	48,2	2,7	17,4	31,8	46,2	4. 9. 2,80				2,49		1,47	4. 10. 28,56	B.	
		☉ 2 L. ....	35,5	49,8	4,2	18,6	33,3	47,6	2,2	4. 11. 18,75				18,44			4. 12. 44,51	B.	
B. (w.) XIV. 1016. ....		16,6	30,2	43,8	57,6	11,6	25,2	38,8	14. 52. 57,69				57,64			14. 54. 24,36	B.		
(k) B. (w.) XIV. 1080. ....		8,6	22,3	....	49,6	....	17,7	30,9	14. 55. 49,83				49,79			14. 57. 16,52	B.		
(l) H. C. 27516. ....		3,7	17,2	31,1	44,4	58,4	12,0	25,8	14. 58. 44,66				44,61			15. 0. 11,34	B.		
(m) Thalia .....		....	....	1,4	15,4	....	43,6	....	15. 5. 15,58				15,55			15. 6. 42,28	B.		
α Coronæ .....		20,4	35,4	50,6	5,8	20,9	36,0	51,0	15. 27. 5,73				5,40	86,76		15. 28. 32,16	B.		
α Serpentis .....		59,2	12,8	26,2	39,8	53,6	7,0	20,3	15. 35. 39,85				39,61	86,73		15. 37. 6,38	B.		
Antares .....		17,7	32,6	47,6	2,6	17,7	32,6	47,6	16. 19. 2,63				2,64	86,87		16. 20. 29,45	B.		
(n) H. C. 30869. ....		39,5	53,9	8,3	22,8	37,4	51,6	6,2	16. 50. 22,81				22,81			16. 51. 49,65	C.		
α Herculis .....		52,9	6,6	20,6	34,5	48,6	2,4	16,3	17. 6. 34,56				34,27	86,85		17. 8. 1,13	C.		
May 27	(o) ☉ 1 L. ....	20,9	35,8	49,9	4,5	19,1	33,3	47,8	4. 13. 4,47				4,16		1,53	4. 14. 31,75	B.		
	Spica .....	22,4	36,3	49,7	3,4	17,4	30,9	44,5	13. 16. 3,51				3,45	88,13		13. 17. 31,62	B.		
	(p) B. (w.) XIV. 1052. ....	....	8,3	22,2	36,2	50,3	4,2	....	14. 54. 36,25				36,22			14. 56. 4,49	B.		
	H. C. 27567. ....	18,4	32,8	47,2	1,3	15,9	30,0	44,2	15. 0. 1,40				1,40			15. 1. 29,68	B.		
	(q) * N.P.D. 103°. 16'. ....	39,2	53,1	6,8	20,6	34,5	48,2	2,2	15. 13. 20,65				20,61			15. 14. 48,90	B.		
	B.A.C. 5105. ....	28,6	43,0	57,8	12,4	27,2	42,0	56,2	15. 22. 12,45				12,45			15. 23. 40,75	B.		
	α Coronæ .....	18,8	33,8	49,2	4,3	19,4	34,3	49,6	15. 27. 4,20				3,87	88,29		15. 28. 32,18	B.		
	(r) H. C. 28495. ....	20,2	34,3	48,6	2,8	17,1	31,2	45,6	15. 30. 2,83				2,82			15. 31. 31,13	B.		
	α Serpentis .....	57,6	11,2	24,7	38,2	51,8	5,3	19,1	15. 35. 38,27				38,03	88,31		15. 37. 6,35	B.		
	H. C. 28766. ....	34,8	48,8	3,0	17,1	31,3	45,6	59,8	15. 39. 17,20				17,18			15. 40. 45,50	B.		
	(s) B. (w.) XV. 845. ....	39,2	53,1	6,9	20,8	34,8	48,3	2,6	15. 42. 20,81				20,77			15. 43. 49,09	B.		
	B. (w.) XV. 916. ....	12,4	26,2	40,2	54,0	8,1	21,8	36,0	15. 46. 54,10				54,06			15. 48. 22,39	B.		
	H. C. 29052. ....	....	3,6	17,4	31,3	45,8	59,6	....	15. 49. 31,55				31,54			15. 50. 59,87	B.		
	H. C. 29175. ....	7,2	21,2	34,8	49,0	3,3	17,0	31,0	15. 53. 49,08				49,06			15. 55. 17,40	B.		
	H. C. 29281. ....	5,1	19,2	33,7	48,2	2,8	17,2	31,6	15. 56. 48,26				48,25			15. 58. 16,59	B.		
	H. C. 29375. ....	....	7,4	21,4	36,1	50,6	4,8	....	15. 59. 36,07				36,04			16. 1. 4,38	B.		
	(t) B. A. C. 5383. ....	20,6	34,7	49,1	3,2	17,6	31,6	46,0	16. 2. 3,26				3,25			16. 3. 31,59	B.		
	δ Ophiuchi. ....	34,8	48,3	1,8	15,2	29,0	42,0	55,8	16. 5. 15,27				15,14	88,40		16. 6. 43,49	B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°, 308, - 26°, 907, - 13°, 520, - 0°, 067, + 13°, 579, + 26°, 870, + 40°, 353.

(a) Clouds passing. (b) Partly without a dark glass. (c) Cloudy. (d) Irregular motion. N.B. The observations marked with the italic C were taken by Mr Criswick. (e) Interruption. (f) The instrument was slightly struck on the west side of the eye-piece just before this observation. (g) The following of two one Interval apart. (h) 'One north-preceding about 25'. (i) The afternoon cloudy and no clock-stars could be observed. (k) 'Very faint,' probably from cloud. (l) 'Only one star.' (m) 'Too faint.' The wires noted were IV, V, and VII, and it is therefore probable that the object was not the Planet. (n) No correction is applied for the difference of personal equation of B. and C. (o) A thunder-storm at this time; 2 L. hid. (p) 'The north-preceding of two.' (q) Observed also with the Circle, having been compared with Thalia May 16 and 17. (r) 'The southern of two.' (s) 'One of Mag. 9,10 south-following about 15'.

(t) 'The north-preceding companion of ν Scorpii.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"				"	s.	s.	
May 30	(a) $\odot$ 1 L..... Spica.....	.... ....	42,4 31,6	57,2 45,2	11,7 58,9	26,0 12,6	40,0 26,2	.... ....	4. 26. 11,47 13. 16. 58,91	-4,2	-0,7	+9,1	11,16 58,85	 32,71	1,54	4. 26. 43,18	B. B.		
May 31	(a) $\odot$ 1 L..... $\beta$ Leonis..... Spica..... (b) Arcturus..... (b) $\epsilon$ Bootis..... $\alpha^2$ Libræ..... H. C. 27231..... H. C. 27320..... (c) B.(w.) xiv.1080 B. (d) Thalia B..... (e) B. (w.) xv. 124.. (f) H. C. 27880..... H. C. 28075..... H. C. 28168..... H. C. 28282..... $\alpha$ Coronæ..... $\alpha$ Serpentis.....	31,3 21,7 16,3 44,6 18,7 34,0 3,8 12,6 30,8 44,1 .... 52,9 57,1 13,8 24,4 13,0 51,7	45,6 35,6 29,8 58,8 34,0 47,7 18,1 40,2 44,7 57,8 45,2 7,1 11,1 27,7 39,1 28,1 5,2	.... 49,4 43,4 13,0 49,2 1,7 32,3 40,2 38,3 50,8 58,7 21,2 24,8 41,3 .... 43,2 18,8	14,8 3,2 57,3 27,3 4,2 15,7 46,2 54,2 51,7 .... 35,3 39,0 55,3 7,8 58,2 32,2	29,3 17,6 11,2 42,0 19,7 29,8 1,0 8,3 .... .... 39,7 49,6 53,1 9,7 22,8 13,6 46,0	.... 31,1 38,3 10,6 50,0 57,6 29,3 36,2 .... .... .... 3,7 7,1 23,3 51,9 43,6 13,0	.... 4. 30. 14,76 11. 41. 3,41 13. 16. 57,26 14. 8. 27,52 14. 38. 4,36 14. 42. 15,73 14. 49. 46,53 14. 52. 54,29 14. 56. 42,61 15. 1. 55,48 15. 7. 12,46 15. 10. 35,40 15. 16. 39,05 15. 19. 55,47 15. 24. 8,10 15. 27. 58,29 15. 36. 32,31	18,29 34,96	13,00 22,99	48,29 48,34	1,76	4. 34. 53,52 4. 37. 10,20	B. B.					
June 9	$\alpha$ Herculis..... $\alpha$ Ophiuchi.....	31,0 41,3	45,2 55,1	58,7 8,7	12,7 22,7	26,8 36,6	40,3 50,2	54,2 4,2	17. 7. 12,70 17. 27. 22,68	+4,5	-0,8	+8,9	13,00 22,99	48,29 48,34	1,76		B. B.		
June 10	(g)(h) $\odot$ 1 L..... (g) $\epsilon$ Bootis..... (g) $\alpha^2$ Libræ.....	.... 2,3 17,7	37,0 17,8 31,8	51,8 32,8 45,7	6,6 48,2 59,6	21,3 3,3 13,6	36,2 18,7 27,5	.... 33,6 41,3	5. 11. 6,59 14. 37. 48,10 14. 41. 59,60				6,90 48,41 0,16	 40,83 49,94	1,69	5. 11. 56,13	B. B. B.		
June 12	$\alpha$ Serpentis..... $\alpha$ Herculis.....	32,3 26,2	46,0 40,2	59,3 54,0	12,8 7,8	26,8 22,1	40,2 35,7	53,6 49,6	15. 36. 13,00 17. 7. 7,95		-1,2		13,31 8,23	53,10 53,09	1,63		B. B.		
June 13	$\odot$ 2 L..... (i) Polaris SP..... Spica.....	1,3 .... 55,3	16,1 .... 9,1	30,7 57,5 22,7	45,2 48,7 36,3	0,2 32,0 50,2	14,8 14,3 3,8	29,6 .... 17,6	5. 25. 45,42 13. 4. 44,62 13. 16. 36,43				45,71 48,16 36,93	 54,56	1,67	5. 26. 39,72	B. B. B.		
June 14	$\epsilon$ Bootis..... (k) $\alpha^2$ Libræ.....	56,2 11,5	11,3 25,5	26,2 39,2	41,3 53,1	57,0 7,3	12,0 21,1	27,2 35,2	14. 37. 41,60 14. 41. 53,27				41,88 53,82	56,34 56,27	1,59		B. B.		
June 15	$\alpha$ Herculis.....	....	....	....	3,2	17,2	30,8	44,7	17. 7. 3,13				3,41	57,93	1,52		B.		
June 17	(l) $\odot$ 2 L..... (m) Polaris SP..... Spica..... $\epsilon$ Bootis..... $\alpha^2$ Libræ.....	31,7 .... 49,2 51,8 ....	46,4 .... 2,8 6,7 20,8	1,3 53,6 16,4 21,8 34,6	.... 46,5 30,0 37,0 48,5	31,0 29,0 43,9 52,3 2,8	45,6 10,5 57,6 7,4 16,3	0,1 .... 11,2 22,6 ....	5. 42. 16,01 13. 4. 42,92 13. 16. 30,15 14. 37. 37,09 14. 41. 48,61		-0,9	+8,2	16,29 46,70 30,62 37,37 49,12	 60,83 60,83 60,97	1,54	5. 43. 16,63	B. B. B. B. B.		
June 19	(n) $\odot$ 1 L..... $\odot$ 2 L..... $\alpha^2$ Libræ..... $\alpha$ Coronæ..... $\alpha$ Serpentis..... $\alpha$ Herculis..... H. C. 31556..... $\delta$ Ophiuchi..... $\alpha$ Ophiuchi.....	30,2 48,0 3,7 .... 21,3 15,2 .... .... 25,8	44,8 2,8 17,7 .... 35,0 29,1 .... 5,3 55,4 39,6	.... 17,3 31,6 .... 48,6 43,1 .... 10,2 53,3	14,2 32,1 45,6 27,8 1,9 57,1 .... 19,2 24,8 7,3	29,1 47,0 59,6 43,1 15,7 29,2 11,2 34,4 39,8 21,0	43,8 1,3 13,6 58,1 29,2 38,8 4,3 54,3 34,6	.... 16,2 27,5 13,3 42,7 38,8 4,3 .... 48,2	5. 48. 14,29 5. 50. 32,10 14. 41. 45,61 15. 27. 27,88 15. 36. 2,05 17. 6. 57,03 17. 13. 19,93 17. 16. 24,91 17. 27. 7,12				14,58 32,39 46,12 28,16 2,34 57,29 20,49 25,47 7,39	 63,96 64,00 64,07 64,08	1,53	5. 49. 17,95 5. 51. 35,76 14. 42. 50,06 15. 28. 32,15 15. 37. 6,34 17. 8. 1,38 17. 14. 24,59 17. 17. 29,57 17. 28. 11,50	B. B. B. B. B. B. B. B. B. B.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°.308, - 26°.907, - 13°.520, - 0°.067, + 13°.579, + 26°.870, + 40°.353.

May 29, 1<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) Too clouded to be well observed. (b) A shutter in the way the image of Arcturus was distorted. (c) Too faint for observation at the wires on account of mist. (d) Extremely faint. 'Another object south preceding.' (e) Faint at times. (f) Mist. (g) Cloudy. (h) 2 L not visible. (i) 'Clouded, but beautifully steady.' (k) Very faint from misty cloud. (l) Cloudy: 1 L only seen at wire I. (m) Quite steady. (n) Cloud, and the wind very high.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
June 23	(a) Polaris SP.....	29,8	14,5	59,5	43,6	27,6	12,7	57,8	13. 4. 40,96	+4,5	-0,9	+7,0	42,76		1,44				B.
	ε Bootis.....			12,6	27,7	43,0	58,2	13,3	14. 37. 27,78				28,02	70,13					B.
	α <sup>2</sup> Libræ.....	57,6	11,4	25,4	39,4	53,6	7,3	21,2	14. 41. 39,42				39,86	70,20					B.
June 24	(b) ☉ 1 L.....	10,6	24,9	39,7	54,5	9,6	23,9	38,7	6. 8. 54,56				54,81			6. 10. 5,91			B.
	☉ 2 L.....	28,2	43,1	57,6	12,4	27,2	41,6	56,4	6. 11. 12,35				12,60			6. 12. 23,70			B.
June 26	(c) ☉ 1 L.....	26,6	41,2	55,8					6. 17. 10,60				10,79		1,19	6. 18. 24,76			B.
	☉ 2 L.....	44,2	59,0	13,4	28,2	43,2	57,6	12,4	6. 19. 28,29				28,48			6. 20. 42,46			B.
June 28	(d) ☉ 2 L.....			29,6	44,2	59,2	13,8	28,4	6. 27. 44,36				44,55		1,08	6. 29. 0,96			B.
	α Coronæ.....				15,1	30,4	45,3	0,6	15. 27. 15,15				15,33	76,78		15. 28. 32,15			B.
	α Serpentis.....	8,8	22,3	35,8	49,2	3,2	16,4	30,2	15. 35. 49,42				49,61	76,78		15. 37. 6,43			B.
	α Herculis.....			29,8	44,2	58,6	12,3	25,9	17. 6. 44,27				44,44	76,97		17. 8. 1,33			B.
	(e) Iris.....				35,1		4,7	18,8	17. 10. 35,38				35,84			17. 11. 52,73			B.
June 30	(f) ☉ 1 L.....					56,0	10,4	25,4	6. 33. 41,21				41,40		1,00	6. 34. 59,84			B.
	☉ 2 L.....	14,8	29,2		58,4				6. 35. 58,60				58,79			6. 37. 17,24			B.
July 3	☉ 1 L.....	20,5	35,2	49,6	4,4	19,1	33,6	48,6	6. 47. 4,43				4,79		0,85	6. 47. 25,49			C.
	☉ 2 L.....	37,6	52,0	6,7	21,5	36,4	50,8	5,4	6. 49. 21,48				21,84			6. 49. 42,54			C.
	(c) Arcturus.....	57,1	11,5	25,8	40,0	54,5	8,6	23,0	14. 8. 40,07				40,41	20,97					C.
	(c)(g) β Libræ.....	8,6	22,1	35,5	49,4	3,1	16,5	30,1	15. 8. 49,33				49,90			15. 9. 10,90			C.
	(c) α Coronæ.....	25,3	40,6	55,6	10,7	26,0	40,9	56,1	15. 28. 10,74				11,08	20,99					C.
July 4	ε Bootis.....	30,5	45,6	0,7	15,8	31,2	46,3	1,5	14. 38. 15,95				16,29	21,75	0,86				C.
	β Libræ.....	7,6	21,4	34,7	48,5	2,3	15,6	29,3	15. 8. 48,49				49,06			15. 9. 10,90			C.
	α Coronæ.....	24,5	39,6	54,6	9,7	25,2	39,8	55,1	15. 28. 9,79				10,13	21,93					C.
July 5	Arcturus.....	55,4	9,7	23,8	38,0	52,7	6,8	21,3	14. 8. 38,25				38,59	22,77	0,93	14. 9. 1,25			C.
	(h) ζ Aquilæ.....	39,3	53,1	7,0	20,7	34,8	48,6	2,5	18. 58. 20,85				21,20	22,82		18. 58. 44,05			C.
	δ Sagittarii.....	1,4	15,3	29,9	44,1	58,5	12,6	27,0	19. 8. 44,11				44,77			19. 9. 7,62			C.
	δ Aquilæ.....	6,5	20,0	33,4	46,8	0,5	13,8	27,5	19. 17. 46,93				47,36			19. 18. 10,22			C.
	(i) H. C. 36847.....		3,6	17,9	31,8	46,1		14,0	19. 22. 31,87				32,52			19. 22. 55,38			C.
	γ Aquilæ.....	16,8	30,5	44,0	57,9	11,7	25,1	39,0	19. 38. 57,86				58,22	22,87		19. 39. 21,09			C.
	(c) α Aquilæ.....	37,6	51,1	4,7	18,1	32,1	45,6	59,3	19. 43. 18,36				18,73	22,86		19. 43. 41,61			C.
	(c) β Aquilæ.....	6,6	20,4		47,1	1,0		28,0	19. 47. 47,31				47,69	22,83		19. 48. 10,57			C.
July 8	(k) Polaris SP.....	16,0	5,5	41,0	34,5	18,5	0,0	43,5	13. 5. 31,29				38,24		1,12				C.
	Polaris SP. B....			24,5	11,5														C.
	Spica.....	23,7	37,5	51,2	4,8	18,6	32,0	45,9	13. 17. 4,81				5,38	25,89		13. 17. 31,27			C.
	ε Bootis.....	26,1	41,4	56,5	11,7	27,1	42,1	57,2	14. 38. 11,73				12,06	25,93		14. 38. 38,01			C.
	β Libræ.....	3,5	17,1	30,7	44,2	58,0	11,6	25,2	15. 8. 44,33				44,89			15. 9. 10,87			C.
	α Coronæ.....	20,5	35,5	50,5	5,6	21,0	36,0	51,0	15. 28. 5,73				6,06	25,97		15. 28. 32,05			C.
	δ Ursæ Minoris..		46,0	31,5	18,5	7,5	51,0		18. 19. 19,05				16,86						C.
	α Lyrae.....	43,7	0,5	17,9	35,1	52,6	9,7	27,0	18. 31. 35,21				35,52			18. 32. 1,65			C.
	γ Aquilæ.....	13,8	27,2	40,9	54,6	8,5	22,0	35,6	19. 38. 54,66				55,01	26,12		19. 39. 21,20			C.
	α Aquilæ.....	34,3	47,7	1,3	15,0	28,5	42,2	56,0	19. 43. 15,00				15,36	26,27		19. 43. 41,55			C.
	β Aquilæ.....		16,9	30,2	44,0		11,0	24,6	19. 47. 43,96				44,34	26,22		19. 48. 10,53			C.
July 15	Polaris SP.....	23,0	7,0	46,0	37,5	21,0	1,5	44,5	13. 5. 34,36				38,85		1,42				C.
	Polaris SP. B....	58,0	36,5	28,0	11,5														C.
	Arcturus.....	43,8	58,1	12,5	26,5	41,3	55,6	9,7	14. 8. 26,79				27,11	34,13		14. 9. 1,21			C.
	ε Bootis.....	17,9	33,0	48,2	3,3	18,9	33,9	49,0	14. 38. 3,45				3,78	34,12		14. 38. 37,91			C.
	(l) α Coronæ.....	12,1	27,2	42,2	57,1	12,6	27,8	42,9	15. 27. 57,42				57,75	34,20		15. 28. 31,93			C.
	α Serpentis.....	51,1	4,7	18,1	31,7	45,5	58,8	12,5	15. 36. 31,77				32,12	34,17		15. 37. 6,30			C.
	β <sup>1</sup> Scorpii.....	41,5	55,5	9,9	24,1	38,8	52,8	7,0	15. 56. 24,23				24,83			15. 56. 59,03			C.
	δ Ophiuchi.....	28,5	42,0	55,3	8,8	22,6	35,9	49,3	16. 6. 8,96				9,41	34,22		16. 6. 43,62			C.
	(m) Antares.....	10,0	24,9	39,8	54,8	9,9	24,7	39,8	16. 19. 54,84				55,49	34,22		16. 20. 29,72			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>,308, -26<sup>s</sup>,907, -13<sup>s</sup>,520, -0<sup>s</sup>,067, +13<sup>s</sup>,579, +26<sup>s</sup>,870, +40<sup>s</sup>,353.  
 July 1, Hardy was put forward 1<sup>m</sup>.

(a) Very steady and well defined. (b) No clock-stars could be observed on June 24 and 26. (c) Cloudy. (d) Just clearing after heavy rain.  
 The clock's rate during June 26-30 is supposed to have varied proportionally to the time. (e) Very faint, but observed satisfactorily. 'An object followed 5s'  
 (f) Dense cloud: without the dark glass. (g) Much obscured at wire VII. (h) Just after it became clear. (i) Extremely faint. (k) Cloudy  
 at wire I. (l) Tremor. (m) Steady, and observed satisfactorily.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"	s.	s.	s.	h.	m.	s.	
July 15	$\alpha$ Herculis.....	45,2	59,0	12,9	26,8	40,9	54,7	8,7	17. 7. 26,89	+4,5	-0,6	+9,0	27,21	34,19	1,42	17. 8. 1,48			C.
	(a) H. C. 34849.....	11,3	25,2	39,4	53,6	8,1	22,0	36,3	18. 38. 53,70				54,29			18. 39. 28,65			C.
	$\beta$ Lyræ.....	20,5	36,7	52,7	8,7	25,0	40,9	57,0	18. 44. 8,79				9,11	34,41		18. 44. 43,48			C.
	H. C. 35359.....	38,8	53,2	....	21,0	35,9	49,9	4,2	18. 50. 21,45				22,05			18. 50. 56,43			C.
	$\zeta$ Aquilæ.....	27,8	41,5	55,5	9,4	23,3	37,1	51,0	18. 58. 9,38				9,69	34,41		18. 58. 44,07			C.
	(b) H. C. 36016.....	7,9	....	36,9	51,5	6,2	20,9	35,2	19. 4. 51,58				52,20			19. 5. 26,59			C.
	B.A.C. 6616.....	48,3	2,7	16,8	31,0	45,4	59,7	13,9	19. 12. 31,11				31,72			19. 13. 6,12			C.
	$\delta$ Aquilæ.....	55,2	8,5	22,0	35,6	49,1	2,5	16,0	19. 17. 35,56				35,94			19. 18. 10,34			C.
	(c) H. C. 36887.....	....	33,8	....	3,0	....	....	44,7	19. 23. 2,50				3,09			19. 23. 37,50			C.
	(d) H. C. 37221.....	58,2	....	27,1	41,3	56,3	10,6	25,0	19. 30. 41,57				42,19			19. 31. 16,60			C.
	$\gamma$ Aquilæ.....	5,4	19,1	32,9	46,5	0,4	13,8	27,5	19. 38. 46,52				46,84	34,37		19. 39. 21,26			C.
	$\alpha$ Aquilæ.....	26,1	39,8	53,2	6,9	20,5	34,0	47,7	19. 43. 6,89				7,23	34,49		19. 43. 41,66			C.
	$\beta$ Aquilæ.....	55,3	8,9	22,2	35,5	49,5	3,0	16,6	19. 47. 35,86				36,21	34,44		19. 48. 10,64			C.
July 17	(e) 51 (Hev.) Cepheisr. ....	....	....	56,0	42,5	....	....	....	18. 29. 40,17				42,79		1,39	18. 30. 20,05			C.
	(f) $\beta$ Lyræ.....	17,5	....	....	6,0	22,0	38,0	54,4	18. 44. 5,92				6,24	37,28					C.
	(g) Sirius.....	21,7	35,8	49,7	3,7	17,9	31,5	45,8	6. 38. 3,73				4,31	37,98	1,37	6. 38. 42,16			C.
July 18	(h) $\odot$ 1 L.....	15,9	30,1	....	....	13,9	28,0	42,2	7. 47. 59,10				59,42			7. 48. 37,34			C.
	$\odot$ 2 L.....	31,2	45,6	0,0	15,0	29,1	43,4	58,1	7. 50. 14,63				14,95			7. 50. 52,87			C.
	Polaris SP.....	17,0	4,5	40,0	32,5	16,0	59,5	44,0	13. 5. 30,50				34,99						C.
	Polaris SP. M....	19,0	3,5	48,0	32,5	17,0	1,0	46,0	13. 5. 29,75				34,24						C.
	Polaris SP. B....	....	....	24,0	9,5	....	....	....											C.
	(i) Spica.....	11,5	25,1	38,8	52,5	6,3	19,9	33,5	13. 16. 52,51				53,04	38,12		13. 17. 31,27			C.
	$\eta$ Bootis.....	23,7	37,8	51,9	6,1	20,4	34,4	49,0	13. 47. 6,19				6,50			13. 47. 44,76			C.
	(k) Arcturus.....	39,7	53,9	8,1	22,3	37,1	51,3	5,4	14. 8. 22,54				22,86	38,34		14. 9. 1,14			C.
	(l) $\delta$ Aquilæ.....	51,2	4,7	18,0	....	45,0	58,4	11,9	19. 17. 31,52				31,90			19. 18. 10,47			C.
	$\gamma$ Aquilæ.....	1,3	15,0	28,8	42,1	56,1	9,6	23,5	19. 38. 42,34				42,66	38,57		19. 39. 21,25			C.
	$\alpha$ Aquilæ.....	22,1	35,7	49,2	3,0	16,4	30,0	43,8	19. 43. 2,88				3,22	38,53		19. 43. 41,82			C.
	(m) $\alpha^1$ Capricorni ....	15,0	28,7	42,5	56,5	....	....	....	20. 8. 56,41				56,96			20. 9. 35,58			C.
	$\beta$ Tauri.....	....	53,6	8,8	24,2	39,8	54,9	10,1	5. 16. 24,26				24,58	39,10	1,34	5. 17. 3,72			C.
July 19	(n) $\odot$ 1 L.....	15,6	29,9	44,5	59,0	13,2	27,7	43,2	7. 51. 59,02				59,34			7. 52. 38,63			C.
	$\odot$ 2 L.....	31,0	45,3	59,8	14,3	28,8	43,0	57,2	7. 54. 14,20				14,52			7. 54. 53,81			C.
	(o) Polaris SP.....	14,5	2,0	40,5	32,0	15,5	58,0	....	13. 5. 29,10				33,59						C.
	Polaris SP. B....	47,0	27,0	22,5	9,0	....	....	....											C.
	Spica.....	10,0	23,7	37,4	51,0	4,8	18,4	32,0	13. 16. 51,04				51,57	39,58		13. 17. 31,16			C.
	$\eta$ Bootis.....	22,4	36,5	50,5	4,8	19,4	33,5	47,5	13. 47. 4,94				5,25			13. 47. 44,87			C.
	Arcturus.....	38,2	52,6	6,9	21,1	35,6	49,9	4,1	14. 8. 21,20				21,52	39,67		14. 9. 1,16			C.
	$\epsilon$ Bootis.....	12,4	27,5	42,6	57,9	13,3	28,2	43,5	14. 37. 57,92				58,25	39,60		14. 38. 37,92			C.
	$\alpha^2$ Libræ.....	27,8	41,7	55,7	9,5	23,7	37,6	51,5	14. 42. 9,65				10,22	39,64		14. 42. 49,89			C.
	(p) $\alpha$ Herculis.....	39,5	53,4	7,2	21,1	35,0	49,0	3,0	17. 7. 21,17				21,49	39,89		17. 8. 1,30			C.
	$\alpha$ Ophiuchi.....	50,0	3,6	17,3	31,3	45,1	58,8	12,7	17. 27. 31,25				31,57	39,92		17. 28. 11,40			C.
	(q) H. C. 39249.....	40,6	54,9	8,9	....	37,4	51,9	6,0	20. 17. 23,27				23,87			20. 18. 3,85			C.
	(q) B. (w.) xx. 612....	....	36,5	50,3	4,1	18,2	32,0	46,0	20. 24. 4,26				4,82			20. 24. 44,81			C.
	$\alpha$ Aquarii.....	58,2	11,6	25,1	38,5	52,1	5,5	19,0	21. 57. 38,57				39,00	40,05		21. 58. 19,08			C.
July 20	$\odot$ 1 L.....	14,9	29,4	43,7	58,3	12,9	26,9	41,6	7. 55. 58,25				58,57		1,41	7. 56. 39,15			C.
	(e) $\odot$ 2 L.....	30,2	44,5	59,2	13,4	28,0	42,2	56,7	7. 58. 13,46				13,78			7. 58. 54,36			C.
	$\alpha$ Herculis.....	38,2	52,1	6,0	19,8	33,9	47,7	1,5	17. 7. 19,89				20,21	41,17		17. 8. 1,33			C.
	$\alpha$ Ophiuchi.....	48,7	2,5	16,3	30,0	44,0	57,8	11,5	17. 27. 30,11				30,43	41,06		17. 28. 11,57			C.
	(r) H. C. 39425.....	1,9	15,8	30,0	....	58,3	12,0	26,0	20. 21. 43,99				44,58			20. 22. 25,89			C.
	(s) $\eta$ Capricorni.....	42,6	57,3	11,6	25,9	40,6	54,5	8,9	20. 55. 25,92				26,53			20. 56. 7,87			C.
	(e) $\beta$ Aquarii.....	32,0	45,5	59,0	12,6	....	53,1	21,2	21. 23. 12,58				13,06	41,39		21. 23. 54,43			C.
	$\epsilon$ Pegasi.....	40,4	53,9	7,4	21,2	35,0	48,5	2,1	21. 36. 21,21				21,55			21. 37. 2,93			C.
	(t) Sirius.....	17,6	31,5	45,5	59,9	13,9	27,6	42,0	6. 37. 59,72				0,28	42,05	1,51	6. 38. 42,24			C.
										-0,5		+8,6							
July 21	(u) $\odot$ 1 L.....	13,9	28,0	42,9	57,0	11,6	25,7	40,4	7. 59. 57,07				57,37			8. 0. 39,41			C.
	$\odot$ 2 L.....	28,8	43,2	57,7	12,1	26,5	41,0	55,4	8. 2. 12,10				12,40			8. 2. 54,45			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

(a) Faint. (b) 'Another of equal Mag. distant about 15 $^s$ .' (c) Extremely faint, and the observation very doubtful. (d) Very faint: observed with certainty only at wire VII. (e) Cloudy. (f) Cloudy. The illuminating lamp was nearly out. (g) Tremor: cloud at wire V. (h) Indistinct. The shutter could not be sufficiently opened. (i) Tremulous. (k) Cloudy after this till the next. (l) Faint from cloud. (m)  $\alpha^2$  was hid by cloud. (n) The Sun had been shining some time on the Instrument. (o) Cloud at wire VII. (p) 'Beautifully defined.' (q) 'Another south-preceding.' (r) 'Others very faint near.' (s) 'The only star seen.' (t) Tremor. (u) 'Not good: the glass too dark.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"	s.	s.	s.	h.	m.	s.	
July 21	(a) Polaris SP. M...	....	3,0	47,5	32,0	16,5	59,5	....	13. 5. 29,02	+4,5	-0,5	+8,6	32,65		1,51				C.
	Polaris SP.....	....	....	....	32,0	15,5	56,5	42,0	13. 5. 29,25				32,88						C.
	Arcturus.....	35,5	49,7	4,1	18,4	33,0	47,2	1,5	14. 8. 18,49				18,80	42,37		14. 9. 1,23			C.
	$\beta^1$ Scorpii.....	33,3	47,4	1,6	15,6	30,4	44,4	58,8	15. 56. 15,93				16,50			15. 56. 59,04			C.
	$\delta$ Ophiuchi.....	20,2	33,6	47,0	0,5	14,2	27,5	41,0	16. 6. 0,57				1,00	42,59		16. 6. 43,55			C.
	Antares.....	1,7	16,6	31,6	46,6	1,7	16,5	31,6	16. 19. 46,62				47,25	42,43		16. 20. 29,82			C.
	B. (w.) xx. 879..	12,0	25,8	39,7	53,5	7,4	21,2	34,8	20. 33. 53,48				54,02			20. 34. 36,85			C.
	(b) B.A.C. 7202....	43,4	57,6	11,7	25,8	....	....	....	20. 39. 25,96				26,53			20. 40. 9,37			C.
	(b) H. C. 40125....	....	....	....	....	41,2	55,4	9,7	20. 39. 26,99				27,56			20. 40. 10,40			C.
	B. (w.) xx. 1530..	44,9	59,0	12,8	26,8	41,0	51,5	8,4	20. 59. 26,77				27,32			21. 0. 10,18			C.
	$\zeta$ Cygni.....	15,9	31,3	46,7	2,2	17,8	33,4	48,7	21. 6. 2,28				2,60			21. 6. 45,47			C.
	19 Aquarii.....	59,9	13,4	27,1	41,0	54,7	8,4	22,1	21. 16. 40,94				41,45			21. 17. 24,33			C.
	$\beta$ Aquarii.....	30,5	43,9	57,4	11,0	24,8	38,2	51,7	21. 23. 11,07				11,53	42,94		21. 23. 54,42			C.
	(c) B. (w.) xxi. 734..	....	59,5	....	26,6	40,6	54,0	....	21. 30. 26,77				27,26			21. 31. 10,15			C.
	$\epsilon$ Pegasi.....	38,8	52,3	6,1	19,7	33,5	47,0	0,6	21. 36. 19,72				20,05			21. 37. 2,95			C.
	$\alpha$ Orionis.....	51,5	5,0	18,6	32,0	45,8	59,3	12,8	5. 46. 32,14				32,46	43,44	1,47	5. 47. 15,91			C.
	Sirius.....	16,2	30,1	44,4	58,1	12,5	26,1	40,3	6. 37. 58,25				58,81	43,54		6. 38. 42,31			C.
	(d) Castor <i>sp.</i> .....	....	....	16,4	32,3	48,5	4,1	20,1	7. 24. 32,39				33,03	43,24		7. 25. 16,57			C.
	Procyon.....	14,8	28,2	41,5	55,4	8,9	22,2	35,8	7. 30. 55,26				55,60	43,49		7. 31. 89,15			C.
	Pollux.....	....	7,6	22,5	38,0	53,6	8,8	24,0	7. 35. 38,11				38,43	43,69		7. 36. 21,98			C.
July 22	☉ 1 L.....	12,0	26,3	40,7	55,1	9,8	23,8	38,1	8. 3. 55,11				55,42			8. 4. 39,01			C.
	☉ 2 L.....	....	41,2	55,4	9,9	24,5	38,5	53,1	8. 6. 9,92				10,23			8. 6. 53,82			C.
	(e) Regulus.....	10,0	23,7	37,5	51,4	5,3	18,8	32,8	9. 59. 51,35				51,66	43,73		10. 0. 35,36			C.
	Arcturus.....	33,8	48,4	2,5	16,8	31,3	45,5	59,8	14. 8. 16,87				17,18	43,97		14. 9. 1,14			C.
	$\epsilon$ Bootis.....	8,0	23,1	38,2	53,5	8,7	23,8	39,1	14. 37. 53,48				53,80	44,01		14. 38. 37,79			C.
	$\alpha^2$ Libræ.....	....	37,3	51,3	5,2	19,4	33,0	47,1	14. 42. 5,25				5,80	44,03		14. 42. 49,79			C.
	$\alpha$ Coronæ.....	2,1	17,3	32,3	47,5	2,8	17,8	32,9	15. 27. 47,53				47,85	44,01		15. 28. 31,89			C.
	$\alpha$ Serpentis.....	41,1	54,7	8,0	21,8	35,5	49,0	2,5	15. 36. 21,80				22,13	44,10		15. 37. 6,18			C.
	$\beta^1$ Scorpii.....	31,6	45,8	0,0	14,4	28,7	42,9	57,1	15. 56. 14,36				14,93			15. 56. 59,00			C.
	$\delta$ Ophiuchi.....	18,4	32,0	45,5	59,0	12,5	26,0	39,5	16. 5. 58,99				59,42	44,16		16. 6. 43,50			C.
	H. C. 39527.....	26,2	40,2	54,4	8,2	22,6	36,5	50,5	20. 24. 8,38				8,95			20. 24. 53,29			C.
	(f) B. (w.) xx. 1170..	....	....	51,1	....	19,1	32,7	46,6	20. 45. 5,05				5,59			20. 45. 49,95			C.
	21 Capricorni....	13,5	27,7	41,6	56,1	10,2	24,3	38,5	20. 51. 55,99				56,55			20. 52. 40,92			C.
	B. (w.) xx. 1450..	27,5	41,6	55,5	9,5	23,6	37,4	51,3	20. 56. 9,49				10,04			20. 56. 54,41			C.
	$\nu$ Aquarii.....	14,4	28,1	41,8	55,7	9,6	23,1	36,9	21. 0. 55,66				56,19			21. 1. 40,57			C.
	$\zeta$ Cygni.....	14,3	30,0	45,1	0,5	16,5	31,6	47,0	21. 6. 0,71				1,03			21. 6. 45,41			C.
	B. (w.) xxi. 418..	5,1	18,7	32,3	46,1	0,2	13,8	27,7	21. 17. 46,27				46,80			21. 18. 31,19			C.
	$\beta$ Aquarii.....	29,1	42,4	56,0	9,6	23,2	36,6	50,1	21. 23. 9,58				10,04	44,44		21. 23. 54,44			C.
	(g) $\epsilon$ Capricorni....	28,5	42,8	57,0	11,4	26,0	40,1	54,1	21. 28. 11,41				11,99			21. 28. 56,40			C.
	$\gamma$ Capricorni....	35,0	48,9	3,1	17,1	31,3	45,3	59,5	21. 31. 17,17				17,74			21. 32. 2,15			C.
	$\epsilon$ Pegasi.....	37,3	51,1	4,5	18,3	32,1	45,3	59,2	21. 36. 18,26				18,58			21. 37. 2,99			C.
July 23	Sirius.....	13,5	27,5	41,5	55,4	9,6	23,6	37,7	6. 37. 55,54				56,10	46,27	1,36	6. 38. 42,32			C.
	(h) Castor.....	....	....	....	....	....	....	17,4	7. 24. 29,71				30,02	46,29					C.
	Procyon.....	12,0	25,4	39,0	52,4	6,3	19,5	33,1	7. 30. 52,53				52,87	46,25		7. 31. 39,14			C.
	Pollux.....	....	5,0	20,4	35,4	51,0	6,0	21,5	7. 35. 35,59				35,91	46,24		7. 36. 22,18			C.
July 24	☉ 1 L.....	6,8	21,0	35,2	49,7	4,3	18,4	32,8	8. 11. 49,75				50,06			8. 12. 36,36			C.
	☉ 2 L.....	21,2	35,5	49,9	4,2	18,8	33,0	47,5	8. 14. 4,30				4,61			8. 14. 50,92			C.
	(i) Polaris SP.....	11,5	58,5	....	28,5	13,5	57,0	41,5	13. 5. 26,98				30,61						C.
	Polaris SP. B....	47,5	22,0	....	....	....	....	....											C.
	Spica.....	3,0	16,6	30,3	44,0	58,0	11,3	25,0	13. 16. 44,03				44,54	46,56		13. 17. 31,15			C.
																			C.
July 25	☉ 1 L.....	3,1	17,4	31,8	46,1	0,4	14,6	29,1	8. 15. 46,07				46,38		1,21	8. 16. 34,12			C.
	☉ 2 L.....	17,5	31,8	46,1	0,4	15,0	29,1	43,4	8. 18. 0,47				0,78			8. 18. 48,52			C.
	$\alpha$ Herculis.....	31,3	45,1	59,0	12,7	26,8	40,4	54,5	17. 7. 12,83				13,13	48,21		17. 8. 1,31			C.
	$b$ Ophiuchi.....	....	....	26,3	41,0	55,8	10,5	25,1	17. 16. 41,02				41,62			17. 17. 29,81			C.
	$\alpha$ Ophiuchi.....	41,6	55,4	9,2	22,8	36,8	50,5	4,3	17. 27. 22,94				23,25	48,21		17. 28. 11,45			C.
																			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

(a) The definition unusually bad. (b) 'Components of a double star, the first north-preceding.' (c) Very faint. (d) Very tremulous.  
 The *sp* star was observed inadvertently:  $+0^s,33$  has been applied to reduce the observation to that of the *nf* star. (e) Tremor. (f) 'Another followed  
 35<sup>a</sup>, viz. B. (w.) xx. 1184. (g) The recorded times were greater by 1<sup>m</sup>. (h) Used for clock-error: the observer considered the time to be very exact.  
 (i) Wire III, which was set down 12<sup>a</sup>. 56<sup>m</sup>. 7<sup>s</sup>,3 is rejected as being very discordant.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				"	"	"	
July 25	58 Ophiuchi . . . .	11,1	25,5	40,0	54,4	9,1	23,5	38,0	17. 33. 54,51	+4,5	-0,5	+8,6	55,11		1,21	17. 34. 43,32		C.	
	4 Sagittarii . . . . .			51,6	6,4	21,2	35,8	50,5	17. 50. 6,41				7,01			17. 50. 55,23		C.	
	(a) 7 Sagittarii . . . . .	23,8	38,3	53,2	7,9	22,6	37,4	52,3	17. 53. 7,93				8,53			17. 53. 56,75		C.	
	B.A.C. 6127 . . . . .	17,9	33,1	48,4	3,8	19,3	34,6	49,7	17. 58. 3,83				4,47			17. 58. 52,70		C.	
	$\mu^1$ Sagittarii . . . . .	32,4	46,8	1,1	15,5	30,0	44,3	58,8	18. 4. 15,56				16,15	48,22		18. 5. 4,38		C.	
	$\delta$ Ursæ Minoris . . . .	30,5	18,0	3,3	50,0	41,0	25,0		18. 18. 51,44				50,61					C.	
	51 (Hev.) Cephei SP. . . .		8,5	45,4					18. 29. 28,80				30,96			18. 30. 19,21		C.	
July 26	$\alpha$ Herculis . . . . .	30,1	44,1	57,8	11,7	25,8	39,5	53,4	17. 7. 11,77				12,07	49,27	1,02			C.	
	(b) $\alpha$ Ophiuchi . . . . .	40,6	54,3	8,0	22,0	35,8	49,5	3,4	17. 27. 21,94				22,25	49,20				C.	
July 28	$\delta$ Ophiuchi . . . . .	11,6	25,1	38,4	51,9	5,5	18,8	32,4	16. 5. 51,95		-0,8	+8,2	52,35	51,18	1,14	16. 6. 43,50		C.	
	Antares . . . . .	53,2	8,0	22,8	37,7	52,9	7,7	22,8	16. 19. 37,87				38,46	51,18		16. 20. 29,62		C.	
	$\alpha$ Herculis . . . . .	28,1	42,1	56,1	10,1	24,0	37,7	51,5	17. 7. 9,94				10,21	51,11		17. 8. 1,40		C.	
	(c) $\theta$ Ophiuchi . . . . .	28,3	43,4	57,4	13,1	28,2	42,8	57,7	17. 12. 12,98				13,56			17. 13. 4,76		C.	
	$\alpha$ Aquilæ . . . . .	9,7	23,1	36,6	50,1	4,0	17,4	31,1	19. 42. 50,28				50,57	51,25		19. 43. 41,89		C.	
	$\beta$ Aquilæ . . . . .	38,5	51,9	5,5	19,1	32,7	46,1	59,7	19. 47. 19,07				19,37	51,38		19. 48. 10,69		C.	
	$\alpha^2$ Capricorni . . . . .	26,5	39,9	53,9	7,4	21,7	35,3	49,1	20. 9. 7,69				8,18	51,37		20. 9. 59,52		C.	
	(d) Urania B. . . . .			21,0	35,5				21. 3. 25,02				25,49			21. 4. 16,87		C.	
	(e) Sirius . . . . .	7,8	21,9	36,0	49,7	4,1	17,9	32,1	6. 37. 49,93				50,46	52,00	1,19			C.	
July 29	(f) $\odot$ 2 L. . . . .	58,2	12,3	26,4	40,5	55,2	9,3	23,5	8. 33. 40,77				41,04			8. 34. 33,02		C.	
	$\zeta$ Aquilæ . . . . .	10,0	23,7	37,6	51,5	5,5	19,2	33,0	18. 57. 51,50				51,77	52,37				C.	
Aug. 1	(g) Polaris SP. . . . .	11,5	58,0						13. 5. 25,67				29,24		1,17			C.	
	$\alpha$ Coronæ . . . . .	50,4	5,4	20,6	35,7	51,1	6,0	21,1	15. 27. 35,76				36,05	55,67		15. 28. 31,78		C.	
	$\alpha$ Serpentis . . . . .	29,5	43,1	56,6	10,0	23,8	37,1	50,8	15. 36. 10,12				10,42	55,69		15. 37. 6,16		C.	
	$\alpha^2$ Capricorni . . . . .	21,6	35,3	49,2	3,0	17,0	30,6	44,5	20. 9. 3,03				3,52	56,06		20. 9. 59,48		C.	
	$\beta$ Capricorni . . . . .	12,5	26,5	40,4	54,2	8,5	22,2	36,0	20. 11. 54,33				54,85			20. 12. 50,82		C.	
	$\pi$ Capricorni . . . . .	21,0	35,3	49,4	3,7	18,0	32,1	46,5	20. 18. 3,71				4,25			20. 19. 0,22		C.	
Aug. 2	(f) $\mu^1$ Sagittarii . . . .	23,5	37,8	52,4	6,6	21,1	35,8	50,1	18. 4. 6,76				7,31	57,05	1,17			C.	
	(b) $\delta$ Ursæ Minoris . . . .		7,3	54,0	41,5				18. 18. 41,94				41,08					C.	
Aug. 3	$\alpha$ Lyrae . . . . .	11,8	28,7	46,1	3,3	20,7	37,6	54,9	18. 31. 3,30				3,59		1,18	18. 32. 1,81		C.	
	$\beta$ Lyrae . . . . .	56,7	12,7	28,8	45,0	1,2	17,1	33,2	18. 43. 44,96				45,24	58,22				C.	
	$\zeta$ Aquilæ . . . . .	4,0	17,9	31,6	45,6	59,5	13,4	27,2	18. 57. 45,60				45,87	58,26				C.	
	(f) H. C. 35970 . . . . .				32,6	47,3	1,9	16,3	19. 3. 33,09				33,64			19. 4. 31,89		C.	
	$\delta$ Aquilæ . . . . .	31,3	44,9	58,1	11,7	25,4	38,8	52,2	19. 17. 11,77				12,10			19. 18. 10,36		C.	
	B.A.C. 6671 . . . . .					32,2	46,6	1,1	19. 21. 17,66				18,22			19. 22. 16,48		C.	
Aug. 7	(f)(h) $\odot$ 1 L. . . . .	25,0	39,2	53,0	6,9	21,3	35,2	49,4	9. 6. 7,14		-1,0	+5,4	7,29		1,40	9. 7. 10,18		C.	
	$\epsilon$ Bootis . . . . .	48,7	3,9	18,9	34,3	49,4	4,6	19,8	14. 37. 34,23				34,42	63,14		14. 38. 37,64		C.	
	$\alpha$ Coronæ . . . . .	42,9	57,9	13,0	28,2	43,5	58,5	13,7	15. 27. 28,25				28,43	63,19		15. 28. 31,69		C.	
	$\alpha$ Serpentis . . . . .	22,0	35,5	49,1	2,6	16,4	29,5	43,4	15. 36. 2,64				2,80	63,24		15. 37. 6,07		C.	
	(f) $\delta$ Ophiuchi . . . . .		12,8		39,5	53,4	6,5	20,4	16. 5. 39,74				39,98	63,44		16. 6. 43,28		C.	
	(i) $\alpha$ Ophiuchi . . . . .	26,3	40,1	54,0	7,5	21,7	35,5	49,2	17. 27. 7,76				7,90	63,46		17. 28. 11,28		C.	
Aug. 8	Arcturus . . . . .	13,4	27,6	41,7	56,0	10,5	24,7	39,3	14. 7. 56,17				56,32	64,60	1,42	14. 9. 0,93		C.	
	$\epsilon$ Bootis . . . . .	47,3	2,4	17,4	32,3	48,2	3,1	18,4	14. 37. 32,73				32,92	64,63		14. 38. 37,56		C.	
	$\alpha$ Coronæ . . . . .	41,4	56,6	11,4	26,7	42,1	57,0	12,3	15. 27. 26,79				26,97	64,64		15. 28. 31,66		C.	
	(k) $\delta$ Aquilæ . . . . .	25,1	38,5	51,7	5,1	19,1	32,3	45,8	19. 17. 5,37				5,55			19. 18. 10,46		C.	
	$\gamma$ Aquilæ . . . . .	35,4	48,9	2,5	16,4	30,1	43,5	57,4	19. 38. 16,32				16,46	64,86		19. 39. 21,39		C.	
	$\alpha$ Aquilæ . . . . .	56,0	9,5	23,0	56,8	50,4	3,9	17,6	19. 42. 36,74				36,89	64,95		19. 43. 41,83		C.	
	$\beta$ Aquilæ . . . . .	25,0	38,7	52,0	5,6	19,5	32,5	46,5	19. 47. 5,69				5,84	64,94		19. 48. 10,78		C.	
	$\alpha^2$ Capricorni . . . . .	13,0	26,6	40,5	54,1	8,4	21,4	35,5	20. 8. 54,21				54,52	65,09		20. 9. 59,48		C.	
Aug. 9	$\alpha$ Lyrae . . . . .	3,5	20,7	38,0	55,3	12,7	29,7	47,1	18. 31. 55,29				55,51		1,36	18. 32. 1,80		C.	
	$\beta$ Lyrae . . . . .	48,8	4,8	20,7	37,0	53,2	9,1	25,1	18. 44. 36,96				37,15	6,26		18. 44. 43,45		C.	

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

Aug. 8, 22<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) 'Another north-preceding by about 15<sup>s</sup>.' (b) Cloudy. (c) Tremor and bad definition. (d) The illumination-lamp failed.  
 (e) Tremulous. (f) Faint from cloud. (g) Clouded at the other wires. (h) 'A spot passed wire VII at 9<sup>h</sup>.7<sup>m</sup>.1<sup>s</sup>.5.' (i) Wire IV doubtful.  
 (k) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"				"	s.	s.	
Aug. 9	ζ Aquilæ.....	56,1	9,9	23,8	37,6	51,5	5,4	19,3	18. 58. 37,66	+4,5	-1,0	+5,4	37,80	6,31	1,36	18. 58. 44,12	C.		
	γ Aquilæ.....	33,9	47,5	1,2	14,8	28,7	42,1	55,9	19. 39. 14,87				15,01	6,31		19. 39. 21,36	C.		
	α Aquilæ.....	54,4	8,1	21,7	35,3	49,1	2,5	16,0	19. 43. 35,30				35,45	6,39		19. 43. 41,81	C.		
	β Aquilæ.....	23,6	37,2	50,6	4,0	17,8	31,3	44,9	19. 48. 4,20				4,35	6,43		19. 48. 10,71	C.		
	H. C. 40547.....	28,6	42,6	56,7	10,8	25,1	38,9	53,2	20. 51. 10,84				11,19			20. 51. 17,61	C.		
	ζ Pegasi.....	25,6	59,1	52,8	6,4	20,3	33,9	47,6	22. 34. 6,53				6,68			22. 34. 13,20	C.		
Aug. 10	α Coronæ.....	38,6	53,7	8,7	23,9	39,5	54,4	9,5	15. 28. 24,04				24,22	7,35	1,34		C.		
	α Herculis.....	11,8	25,7	39,5	53,4	7,6	21,3	35,2	17. 7. 53,50				53,64	7,55			C.		
	Sirius.....	52,0	5,9	20,0	33,8	48,1	2,0	16,1	6. 38. 33,99		-0,9		34,33	8,41	1,42	6. 38. 42,64	C.		
	Castor.....	20,6	36,4	52,3	8,0	24,1	40,0	56,0	7. 25. 8,20				8,39	8,30		7. 25. 16,75	C.		
	(a) Procyon.....	....	....	....	....	44,6	58,0	11,4	7. 31. 30,94				31,11	8,31		7. 31. 39,48	C.		
	Pollux.....	28,3	43,5	58,5	14,0	29,3	44,6	59,9	7. 36. 14,01				14,21	8,28		7. 36. 22,58	C.		
Aug. 11	(a) Polaris SP.....	6,5	56,0	34,0	27,0	10,0	....	....	13. 6. 23,20				22,36				C.		
	(b) Polaris SP. M...	13,5	58,5	43,0	27,0	12,5	56,0	41,0	13. 6. 24,68				23,84				C.		
	(a)(b) Spica.....	....	....	....	21,8	35,6	49,1	2,8	13. 17. 21,81				22,11	8,79		13. 17. 20,82	C.		
Aug. 12	Polaris SP. M...	17,0	59,0	44,5	25,5	10,0	56,0	40,0	13. 6. 24,75				23,91				C.		
	γ Aquilæ.....	29,7	43,4	57,0	10,7	24,5	38,0	51,8	19. 39. 10,72				10,86	10,45		19. 39. 21,35	C.		
	α Aquilæ.....	50,5	3,9	17,4	31,1	44,8	58,4	11,9	19. 43. 31,14				31,30	10,53		19. 43. 41,80	C.		
	(c) β Aquilæ.....	....	....	46,6	0,1	13,7	27,1	40,5	19. 48. 0,08				0,24	10,53		19. 48. 10,74	C.		
	ε Pegasi.....	11,6	25,2	38,6	52,4	6,2	19,6	33,4	21. 36. 52,43				52,59			21. 37. 3,20	C.		
Aug. 14	(d) ⊙ 2 L.....	....	....	....	41,0	55,0	8,9	22,8	9. 35. 41,03				41,19		1,41	9. 35. 53,92	C.		
	Polaris SP.....	....	....	....	....	8,0	49,0	33,0	13. 6. 20,22				19,38				C.		
	Spica.....	....	50,1	3,8	17,6	31,4	44,9	58,7	13. 17. 17,59				17,89	12,98		13. 17. 30,84	C.		
	α Coronæ.....	32,9	48,0	3,1	18,1	33,4	48,5	3,6	15. 28. 18,23				18,42	13,08		15. 28. 31,50	C.		
	α Serpentis.....	12,0	25,7	39,1	52,4	6,5	19,8	33,5	15. 36. 52,71				52,87	13,07		15. 37. 5,96	C.		
Aug. 15	Arcturus.....	3,4	17,6	31,8	46,0	0,7	14,9	29,4	14. 8. 46,26				46,42	14,41	1,34	14. 9. 0,82	C.		
	ε Bootis.....	37,3	52,5	7,7	22,8	38,1	53,3	8,6	14. 38. 22,90				23,09	14,34		14. 38. 37,52	C.		
	(e) α Coronæ.....	31,6	46,7	....	....	32,0	47,0	2,2	15. 28. 16,84				17,03	14,46		15. 28. 31,50	C.		
	(f) Urania B.....	57,6	11,4	7,2	21,3	....	....	....	20. 46. 10,64				10,91			20. 46. 25,68	C.		
	H. C. 40547.....	20,3	34,2	48,5	2,5	16,8	30,8	44,9	20. 51. 2,57				2,92			20. 51. 17,69	C.		
	ζ Cygni.....	44,5	59,7	15,2	30,5	46,3	1,7	17,1	21. 6. 30,71				30,91			21. 6. 45,70	C.		
	β Aquarii.....	59,1	12,5	26,0	39,5	53,2	6,7	20,1	21. 23. 39,59				39,86	14,90		21. 23. 54,66	C.		
Aug. 16	(g) ⊙ 1 L.....	15,8	29,8	43,5	57,4	11,4	25,0	38,9	9. 40. 57,40			+6,0	57,58		1,21	9. 41. 13,02	C.		
	⊙ 2 L.....	26,4	40,1	54,2	8,2	22,3	35,9	49,8	9. 43. 8,13				8,31			9. 43. 23,75	C.		
	α Lyrae.....	54,0	11,1	28,4	45,5	2,9	20,0	37,1	18. 31. 45,57				45,81			18. 32. 1,73	C.		
	β Lyrae.....	39,0	54,9	10,9	27,0	43,5	59,4	15,5	18. 44. 27,17				27,39	15,94			C.		
	(h) ζ Aquilæ.....	46,4	0,4	14,1	27,8	41,9	55,5	9,5	18. 58. 27,95				28,12	15,94			C.		
	H. C. 39318.....	33,4	48,0	2,3	16,7	31,2	45,8	0,1	20. 19. 16,79				17,20			20. 19. 33,22	C.		
	(i) H. C. 39518.....	....	....	10,3	24,0	38,0	52,0	5,9	20. 24. 24,17				24,53			20. 24. 40,55	C.		
	(i) B. (w.) xx. 767..	21,8	36,4	50,1	4,2	17,9	31,8	45,7	20. 30. 3,99				4,34			20. 30. 20,37	C.		
Aug. 17	α Herculis.....	2,1	16,0	29,8	43,7	57,9	11,6	25,5	17. 7. 43,80				43,97	17,13	1,38	17. 8. 1,15	C.		
	α Ophiuchi.....	12,5	26,3	40,0	53,7	7,9	21,7	35,1	17. 27. 53,89				54,07	17,17		17. 28. 11,26	C.		
	(k) γ Aquilæ.....	22,9	36,6	50,1	3,8	17,7	31,0	45,0	19. 39. 3,87				4,04	17,26		19. 39. 21,36	C.		
	α Aquilæ.....	43,5	57,1	10,6	24,4	37,9	51,4	5,1	19. 43. 24,29				24,47	17,35		19. 43. 41,79	C.		
	β Aquilæ.....	12,7	26,2	39,6	53,1	7,0	20,3	33,8	19. 47. 53,24				53,43	17,33		19. 48. 10,76	C.		
	(l) B.A.C. 6923.....	59,5	13,9	28,1	42,0	56,9	....	25,2	20. 1. 42,36				42,76			20. 2. 0,10	C.		
	α <sup>1</sup> Capricorni....	36,6	50,1	....	....	....	....	....	20. 9. 17,84				18,19			20. 9. 35,54	C.		
	α <sup>2</sup> Capricorni....	0,3	14,3	28,1	41,9	55,8	9,4	23,3	20. 9. 41,87				42,22	17,41		20. 9. 59,57	C.		
	β Capricorni....	51,1	5,3	19,0	33,0	47,2	1,0	14,9	20. 12. 33,07				33,44			20. 12. 50,79	C.		
	π Capricorni....	59,9	13,9	28,1	42,4	56,9	11,0	25,1	20. 18. 42,47				42,86			20. 19. 0,22	C.		
	(m) B.A.C. 7049.....	....	....	27,0	41,9	56,7	11,3	25,9	20. 20. 41,97				42,38			20. 20. 59,74	C.		
	B.A.C. 7087.....	7,2	21,1	34,8	48,6	2,7	16,4	30,4	20. 25. 48,75				49,11			20. 26. 6,47	C.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) Cloud. (b) Great tremor. (c) Very faint from cloud. (d) 'Good.' (e) Cloudy. (f) Too faint for observation at the wires.  
 (g) The spot observed on Aug. 7 passed wires VI and VII at 9<sup>h</sup>.42<sup>m</sup>.1<sup>s</sup>.2 and 9<sup>h</sup>.42<sup>m</sup>.15<sup>s</sup>.0. (h) Appeared to advance with an unequal motion. (i) Very faint: the second was preceded by a brighter. (k) Wire VI was written down 3,1 and is altered conjecturally. (l) 'Another of Mag. 10 preceded about 1<sup>m</sup>.'  
 (m) The star was low in the field when the transit at wire III was taken.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Aug. 17	(a) H. C. 39793.....	54,9	9,1	23,2	38,0	52,3	....	20,7	20.30.37,79	14,5	-0,9	+6,0	38,19		1,38	20.30.55,56			C.
	H. C. 40019.....	29,2	43,0	56,9	10,8	24,9	38,6	52,7	20.36.10,87				11,24			20.36.28,62			C.
	(b) H. C. 40410.....	58,3	12,4	26,6	40,4	54,8	8,9	23,2	20.47.40,65				41,03			20.47.58,42			C.
	H. C. 40547.....	....	31,6	45,7	59,7	14,2	28,2	42,1	20.50.59,88				0,27			20.51.17,66			C.
	B.A.C. 7322.....	....	....	14,7	29,0	43,4	57,0	11,4	20.57.23,98				29,36			20.57.46,76			C.
	B. (w.) XXI. 441..	27,0	41,0	54,9	8,8	22,6	36,6	50,5	21.19.8,78				9,14			21.19.26,56			C.
	(c) $\beta$ Aquarii.....	56,4	10,0	23,3	36,8	50,7	3,9	17,7	21.23.36,97				37,28	17,51		21.23.54,70			C.
	$\gamma$ Capricorni....	2,2	16,4	30,5	44,6	58,8	12,7	26,9	21.31.44,59				44,98			21.32.2,41			C.
	$\epsilon$ Pegasi.....	4,7	18,5	31,9	45,7	59,5	12,8	26,8	21.26.45,70				45,89			21.37.3,32			C.
	(d) B.A.C. 7601.....	13,4	27,2	41,3	55,7	10,1	23,9	38,0	21.41.55,66				56,04			21.42.13,48			C.
	$\mu$ Capricorni.....	....	....	....	4,7	18,8	32,5	46,3	21.45.4,76				5,12			21.45.22,56			C.
Aug. 18	(e) $\odot$ 2 L. ....	51,4	5,6	....	33,3	47,3	1,0	14,8	9.51.33,25		-1,9		33,37		1,43	9.50.51,53			C.
	Polaris SP.....	....	....	....	....	3,0	44,0	32,0	13.6.16,34				18,50			13.17.30,77			C.
	Spica.....	....	44,9	58,4	11,9	25,9	39,4	53,1	13.17.12,10				12,41	18,42		13.47.44,55			C.
	$\eta$ Bootis.....	43,3	57,5	11,8	26,0	40,4	54,5	8,8	13.47.26,04				26,16			14.9.0,74			C.
	Arcturus.....	59,3	13,6	27,8	42,1	56,7	10,7	25,3	14.8.42,21				42,33	18,45		15.28.31,46			C.
	$\epsilon$ Bootis.....	....	....	....	18,7	34,2	49,3	4,5	14.38.18,88				19,02	18,37		15.37.5,90			C.
	$\alpha$ Coronæ.....	....	....	....	12,7	28,1	43,1	58,2	15.28.12,83				12,97	18,47					C.
	$\alpha$ Serpentis.....	6,7	20,1	33,6	47,2	0,9	14,5	27,8	15.36.47,26				47,40	18,48					C.
Aug. 19	$\odot$ 1 L. ....	23,3	37,1	50,9	4,8	18,7	32,5	46,4	9.52.4,81				4,93			9.52.24,52			C.
	$\odot$ 2 L. ....	33,6	47,3	1,3	15,0	28,9	42,5	56,5	9.54.15,01				15,16			9.54.34,75			C.
Aug. 21	$\beta$ Lyrae.....	32,0	48,0	4,1	20,0	36,4	52,3	8,6	18.44.20,20				20,34	22,92	1,47	18.44.43,39			C.
	$\zeta$ Aquilæ.....	39,4	53,2	6,9	20,8	34,7	48,6	2,6	18.58.20,88				21,00	23,02		18.58.44,06			C.
	$\epsilon^2$ Sagittarii....	7,1	20,9	35,0	48,8	3,2	17,0	31,2	19.33.49,03				49,39			19.34.12,49			C.
	$\gamma$ Aquilæ.....	17,1	30,7	44,4	58,0	11,8	24,4	39,1	19.38.57,93				58,05	23,21		19.39.21,15			C.
	$\alpha$ Aquilæ.....	37,7	51,3	4,8	18,5	32,2	45,7	59,4	19.43.18,52				18,66	23,15		19.43.41,77			C.
	$\beta$ Aquilæ.....	6,9	20,6	33,9	47,5	1,2	14,6	28,1	19.47.47,55				47,69	23,06		19.48.10,80			C.
	(f) Urania B.....	....	....	34,0	46,3	....	....	....	20.40.36,53				36,82			20.40.59,99			C.
	H. C. 40391.....	30,6	44,6	58,7	12,8	27,2	41,1	55,3	20.47.12,90				13,26			20.47.36,43			C.
	$\tau^2$ Aquarii.....	48,7	2,5	16,6	30,4	44,4	58,1	12,1	22.41.30,40				30,74			22.41.54,03			C.
	(g) B. (w.) XXII. 968.	32,0	45,9	59,5	....	27,6	....	55,0	22.46.13,51				13,85			22.46.37,14			C.
	(g) B. (w.) XXII. 1033	....	....	....	13,2	26,9	40,2	53,7	22.49.13,27				13,52			22.49.36,82			C.
	(g) B. (w.) XXII. 1130	48,1	....	....	28,8	42,9	56,2	10,0	22.53.29,08				29,35			22.53.52,65			C.
	$\alpha$ Pegasi.....	26,6	40,5	54,3	8,2	22,5	36,0	50,0	22.57.8,30				8,42	23,33		22.57.31,73			C.
	Procyon.....	....	....	....	....	29,3	42,7	56,3	7.31.15,71				15,86	23,78	1,47	7.31.39,69			C.
	Pollux.....	13,0	28,3	43,5	58,7	14,4	29,3	44,8	7.35.58,86				59,01	23,74		7.36.22,84			C.
Aug. 22	$\delta$ Ophiuchi.....	38,2	51,6	5,1	18,5	32,3	45,5	59,0	16.6.18,60				18,84	24,37		16.6.43,20			C.
	Antares.....	19,6	34,4	49,3	4,4	19,7	34,3	49,6	16.20.4,47				4,89	24,39		16.20.29,26			C.
	$\alpha$ Lyrae.....	45,3	2,5	19,6	36,7	54,2	11,2	28,4	18.31.36,84				37,00			18.32.1,51			C.
	$\beta$ Lyrae.....	....	....	2,4	18,6	34,8	50,7	6,6	18.44.18,55				18,69	24,55		18.44.43,21			C.
	$\xi^2$ Sagittarii....	55,4	9,7	24,0	38,7	53,1	7,4	21,7	18.48.38,57				38,96			18.49.3,48			C.
	$\zeta$ Aquilæ.....	37,8	51,7	5,6	19,4	33,5	47,1	1,1	18.58.19,46				19,58	24,43		18.58.44,11			C.
	$\pi$ Sagittarii.....	....	....	....	42,1	56,7	11,2	25,7	19.0.42,28				42,67			19.1.7,20			C.
	H. C. 35988.....	46,1	0,4	....	29,8	44,7	59,1	13,8	19.4.29,88				30,27			19.4.54,81			C.
	H. C. 36252.....	3,9	18,5	33,0	47,8	2,2	16,7	31,5	19.9.47,66				48,05			19.10.12,59			C.
	B.A.C. 6628.....	15,8	31,0	46,2	1,6	17,0	32,0	47,2	19.15.1,54				1,97			19.15.26,52			C.
	$h^2$ Sagittarii....	42,2	56,9	11,7	26,6	41,7	56,4	11,1	19.27.26,66				27,06			19.27.51,62			C.
	(h) A. (o.) 19840....	28,2	42,5	56,8	11,0	25,8	40,0	54,7	19.31.11,28				11,67			19.31.36,24			C.
	$\gamma$ Aquilæ.....	15,5	29,0	42,8	56,7	10,4	23,8	37,7	19.38.56,56				56,68	24,59		19.39.21,25			C.
	$\alpha$ Aquilæ.....	36,2	49,8	3,4	16,8	30,9	44,2	57,7	19.43.17,00				17,13	24,67		19.43.41,71			C.
	$\beta$ Aquilæ.....	5,6	18,9	32,5	45,7	59,6	12,8	26,6	19.47.45,96				46,10	24,64		19.48.10,68			C.
	$\alpha^2$ Capricorni....	53,4	7,0	20,8	34,6	48,6	2,3	16,1	20.9.34,69				35,02	24,60		20.9.59,63			C.
	H. C. 40391.....	29,2	43,1	....	....	25,7	39,5	53,7	20.47.11,39				11,75			20.47.36,39			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) Very faint. (b) 'One preceding.' (c) Irregular motion. (d) Bad image, at times only a faint patch of light. The stars were very badly defined during the whole of the evening. (e) Very faint from cloud, as seen through a coloured glass, which was held in the hand. (f) Not seen earlier from being so faint. (g) Extremely faint. (h) Observed for H. C. 37282, the R.A. of which is 1<sup>m</sup> greater.



## RIGHT ASCENSIONS OBSERVED WITH THE TRANSIT IN THE YEAR 1854.

Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Aug. 23	⊙ 1 L. ....	6,4	20,3	33,7	47,7	1,7	15,2	29,0	10. 6. 47,72	+4,5	-1,9	+6,0	47,85		1,47	10. 7. 13,31			C.
	(a) ⊙ 2 L. ....	16,1	29,8	43,4	57,3	11,3	25,0	38,6	10. 8. 57,36				57,49			10. 9. 22,95			C.
	(b) Castor .....	2,5	18,4	34,3	...	...	...	...	7. 24. 50,20				50,34	26,68	1,42	7. 25. 17,07			C.
	Procyon .....	32,2	45,7	59,4	12,7	26,5	39,7	53,4	7. 31. 12,80				12,95	26,74		7. 31. 39,69			C.
	Pollux .....	10,2	25,4	40,6	55,9	11,5	26,7	41,7	7. 35. 56,00				56,15	26,65		7. 36. 22,89			C.
Aug. 24	⊙ 1 L. ....	46,2	...	...	...	41,3	54,8	8,6	10. 10. 27,38				27,50			10. 10. 54,39			C.
	⊙ 2 L. ....	55,7	9,3	22,9	...	...	...	...	10. 12. 36,80				36,92			10. 13. 3,82			C.
	(b) α Herculis .....	...	...	...	33,4	47,5	...	15,3	17. 7. 33,52				33,64	27,35		17. 8. 0,94			C.
	(b) δ Ursæ Minoris ..	42,5	29,4	...	3,0	52,7	37,8	...	18. 19. 3,68				3,20			...			C.
	(b) 51 (Hev.) Cepheisr.	...	41,5	18,5	4,0	44,0	...	3,0	18. 30. 2,08				3,37			18. 30. 50,76			C.
	γ Aquilæ .....	12,7	26,3	39,8	53,6	7,4	21,0	34,6	19. 38. 53,63				53,75	27,50		19. 39. 21,20			C.
	(b) α Aquilæ .....	33,4	47,0	0,5	...	...	41,3	...	19. 43. 14,17				14,30	27,48		19. 43. 41,76			C.
	H. C. 40391 .....	26,1	40,3	54,2	8,4	22,8	36,7	51,0	20. 47. 8,50				8,86			20. 47. 36,38			C.
	B. (w.) XXI. 239 ..	14,1	28,0	41,8	55,8	9,7	23,5	37,3	21. 10. 55,74				56,08			21. 11. 23,62			C.
	18 Aquarii .....	5,7	19,6	33,5	47,2	1,4	15,0	28,8	21. 15. 47,32				47,66			21. 16. 15,21			C.
Aug. 25	⊙ 1 L. ....	25,3	38,8	52,6	6,3	20,3	33,9	47,6	10. 14. 6,40			-0,5	6,59		1,48	10. 14. 34,87			C.
	⊙ 2 L. ....	34,8	48,7	2,3	15,8	29,8	43,4	57,4	10. 16. 16,03				16,22			10. 16. 44,50			C.
	α Herculis .....	50,4	4,3	18,0	31,8	46,0	59,9	13,7	17. 7. 32,01				32,20	28,77		17. 8. 0,91			C.
	α Ophiuchi .....	1,0	14,5	28,4	42,2	56,2	9,7	23,6	17. 27. 42,23				42,43	28,70		17. 28. 11,16			C.
	α Lyrae .....	40,8	58,1	15,3	32,4	49,9	7,0	24,2	18. 31. 32,53				32,80			18. 32. 1,59			C.
	β Lyrae .....	26,0	41,9	58,1	14,0	30,4	46,3	2,4	18. 44. 14,16				14,41	28,78		18. 44. 43,22			C.
	σ Sagittarii .....	45,5	0,1	14,7	28,9	43,7	58,1	12,6	18. 55. 29,09				29,51			18. 55. 58,33			C.
	ζ Aquilæ .....	33,5	47,3	0,9	14,8	29,0	42,7	56,5	18. 58. 14,96				15,15	28,83		18. 58. 43,97			C.
	(d) Castor .....	59,5	15,4	31,2	47,2	3,3	18,8	35,0	7. 24. 47,20				47,44	29,64	1,57	7. 25. 17,06			C.
	Procyon .....	29,3	42,8	56,1	9,8	23,4	37,0	50,4	7. 31. 9,83				10,04	29,68		7. 31. 39,66			C.
	Pollux .....	7,2	22,5	37,7	53,0	8,6	23,6	39,0	7. 35. 53,08				53,32	29,54		7. 36. 22,95			C.
Aug. 26	(e) ⊙ 1 L. ....	4,0	17,4	31,2	45,0	58,9	12,3	26,4	10. 17. 45,03				45,23			10. 18. 15,03			C.
	⊙ 2 L. ....	13,2	26,9	40,8	54,3	8,3	22,0	35,7	10. 19. 54,46				54,66			10. 20. 24,47			C.
	ζ Aquilæ .....	31,9	45,8	...	13,4	27,4	41,0	55,0	18. 58. 13,43				13,62	30,35		18. 58. 43,99			C.
	δ Aquilæ .....	59,4	12,7	26,1	39,8	53,3	6,6	20,1	19. 17. 39,72				39,96			19. 18. 10,35			C.
	(b) α Aquilæ .....	...	...	...	...	35,0	48,3	...	19. 43. 11,20				11,40	30,37		19. 43. 41,82			C.
	(b) α Aquarii .....	8,3	21,7	35,0	48,6	2,2	...	...	21. 57. 48,61				48,88	30,67		21. 58. 19,45			C.
Aug. 28	(f) ⊙ 1 L. ....	20,1	33,8	...	1,2	15,1	28,4	42,1	10. 25. 1,16			+7,6	1,43		1,70	10. 25. 34,39			C.
	⊙ 2 L. ....	29,2	42,9	56,5	10,3	24,1	37,5	51,4	10. 27. 10,27				10,54			10. 27. 43,50			C.
	(g) Polaris SP. ....	50,0	39,0	20,0	9,0	54,0	...	26,5	13. 6. 8,09				10,07			...			C.
	Polaris SP. M. ....	55,0	42,0	26,0	9,9	56,0	40,0	23,0	13. 6. 7,46				9,44			...			C.
	Spica .....	...	...	...	...	11,0	24,4	38,2	13. 16. 57,15				57,59	33,15		13. 17. 30,75			C.
	(h) Arcturus .....	...	58,4	12,8	27,0	41,7	55,6	10,0	14. 8. 27,10				27,37	33,27		14. 9. 0,59			C.
	α Coronæ .....	12,4	27,5	42,4	57,6	12,8	27,9	43,0	15. 27. 57,66				57,95	33,31		15. 28. 31,27			C.
	α Serpentis .....	51,7	5,1	18,6	32,0	45,9	59,2	12,7	15. 36. 32,17				32,45	33,29		15. 37. 5,78			C.
	γ Aquilæ .....	6,3	20,2	33,6	47,3	...	14,6	28,3	19. 38. 47,35				47,61	33,60		19. 39. 21,22			C.
	α Aquilæ .....	27,2	40,6	54,2	7,7	21,4	35,0	48,7	19. 43. 7,83				8,11	33,65		19. 43. 41,73			C.
	β Aquilæ .....	56,2	9,7	23,2	36,7	50,3	3,7	17,4	19. 47. 36,74				37,02	33,69		19. 48. 10,64			C.
	B. (w.) XX. 950 ..	59,8	13,8	27,8	41,9	55,9	9,8	23,7	20. 36. 41,81				42,31			20. 37. 15,99			C.
	B.A.C. 7296 .....	49,1	2,8	16,4	30,2	44,1	57,5	11,6	20. 53. 30,24				30,70			20. 54. 4,40			C.
	η Capricorni .....	...	...	...	33,9	48,3	2,6	17,0	20. 55. 33,91				34,43			20. 56. 8,13			C.
	θ Capricorni .....	...	...	...	...	26,8	40,8	55,1	20. 57. 12,61				13,11			20. 57. 46,82			C.
	ν Aquarii .....	25,4	39,3	53,0	6,7	20,7	34,1	47,8	21. 1. 6,72				7,18			21. 1. 40,89			C.
	ζ Cygni .....	25,1	40,5	56,0	11,5	27,3	42,6	58,0	21. 6. 11,57				11,86			21. 6. 45,58			C.
	(i) B. (w.) XXI. 214 ..	...	20,0	34,0	47,9	1,9	15,7	29,5	21. 9. 47,91				48,38			21. 10. 22,10			C.
	(k) 19 Aquarii .....	9,5	23,1	36,8	50,4	4,5	17,8	31,6	21. 16. 50,52				50,98			21. 17. 24,71			C.
	B.A.C. 7451 .....	...	...	...	11,8	25,8	39,5	53,3	21. 19. 11,94				12,40			21. 19. 46,13			C.
	B.A.C. 7485 .....	22,4	36,2	50,3	4,3	18,7	32,5	46,7	21. 25. 4,44				4,94			21. 25. 38,68			C.
	ε Pegasi .....	48,5	2,0	15,6	29,1	43,2	56,6	10,1	21. 36. 29,30				29,58			21. 37. 3,33			C.
	B. (w.) XXI. 985 ..	0,7	14,7	28,5	42,4	56,8	10,4	24,6	21. 40. 42,58				43,08			21. 41. 16,84			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40",308, - 26",907, - 13",520, - 0",067, + 13",579, + 26",870, + 40",353.

(a) The transit at wire VII uncertain, a cloud passing over. (b) Cloudy. (c) Through clouds: doubtful observation. (d) Tremor and bad definition. (e) Serrated and unsteady limbs. (f) The first limb very faint. (g) Observed through a dark glass held in the hand, in preference to the attached apparatus usually employed. (h) Cloud, and disturbance from noise. (i) Bad image; wire VII doubtful. (k) 'Very good.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.											
Aug. 28	$\alpha$ Andromedæ ...	....	....	....	19,0	34,6	49,6	4,8	0. 0. 19,08	+4,5	-0,5	+7,6	19,37	33,85	1,70	0. 0. 53,29	C.		
Aug. 29	⊙ 1 L.....	57,4	11,2	24,6	38,3	52,4	5,7	19,4	10. 28. 38,43				38,71		1,63	10. 29. 13,45	C.		
	⊙ 2 L.....	6,5	20,1	33,7	47,3	1,2	14,8	28,5	10. 30. 47,45				47,73			10. 31. 22,47	C.		
	(a) Polaris SP.....	49,0	37,0	15,0	9,0	51,5	....	21,5	13. 6. 5,52				7,50				C.		
	Spica.....	....	....	41,6	55,4	9,3	22,7	36,4	13. 16. 55,41				55,86	34,87		13. 17. 30,79	C.		
	(b) Arcturus.....	42,5	56,9	....	....	39,8	54,0	8,5	14. 8. 25,45				25,72	34,91		14. 9. 0,71	C.		
	(c) $\epsilon$ Bootis.....	16,5	31,6	46,7	1,9	17,4	32,4	47,6	14. 38. 2,01				2,30	34,91		14. 38. 37,32	C.		
	$\alpha$ Coronæ.....	10,7	25,7	40,7	55,8	11,3	26,3	41,4	15. 27. 55,99				56,28	34,96		15. 28. 31,36	C.		
	(d) $\alpha$ Serpentis.....	....	....	....	....	44,1	57,7	11,2	15. 36. 30,54				30,82	34,90		15. 37. 5,91	C.		
	$\delta$ Ophiuchi.....	....	40,6	54,0	7,6	21,2	34,6	48,1	16. 6. 7,62				8,00	35,11		16. 6. 43,13	C.		
	(e) $\alpha$ Herculis.....	43,8	57,7	11,6	25,4	39,6	53,3	7,3	17. 7. 25,53				25,79	35,12		17. 8. 0,98	C.		
	$\alpha$ Ophiuchi.....	54,3	8,0	21,7	35,6	49,6	3,2	17,0	17. 27. 35,63				35,90	35,17		17. 28. 11,12	C.		
	(f) $\alpha$ Lyrae.....	34,1	51,2	8,4	25,7	43,2	0,2	17,5	18. 31. 25,76				26,07			18. 32. 1,36	C.		
	$\gamma$ Aquilæ.....	4,5	17,9	31,6	45,4	59,3	12,8	26,5	19. 38. 45,43				45,69	35,52		19. 39. 21,05	C.		
	(g) $\alpha$ Aquilæ.....	25,2	38,7	52,2	6,0	19,7	33,1	46,6	19. 43. 5,93				6,21	35,54		19. 43. 41,58	C.		
	$\beta$ Aquilæ.....	54,5	7,8	21,4	35,0	48,7	2,0	15,5	19. 47. 34,99				35,27	35,43		19. 48. 10,65	C.		
	B.A.C. 7296.....	47,2	0,9	14,7	28,5	42,4	56,1	9,8	20. 53. 28,52				28,98			20. 54. 4,43	C.		
	$\eta$ Capricorni.....	....	....	17,9	32,2	46,8	1,0	15,4	20. 55. 32,32				32,84			20. 56. 8,29	C.		
	(h) H. C. 40850.....	....	....	....	59,0	12,5	26,7	40,2	20. 57. 58,92				59,38			20. 58. 34,84	C.		
	(i) B. (w.) XXI. 43 ..	....	34,5	48,5	....	16,4	....	....	21. 3. 2,28				2,74			21. 3. 38,20	C.		
	$\zeta$ Cygni.....	....	39,0	54,5	9,9	25,5	40,9	56,5	21. 6. 9,99				10,28			21. 6. 45,74	C.		
	$\beta$ Aquarii.....	38,3	51,7	5,2	18,8	32,6	45,9	59,5	21. 23. 18,86				19,27	35,56		21. 23. 54,75	C.		
	B.A.C. 7485.....	....	....	....	....	30,9	44,8	21,25	2,73				3,24			21. 25. 38,73	C.		
	$\epsilon$ Capricorni.....	37,8	52,0	6,5	20,7	35,4	49,4	3,8	21. 28. 20,80				21,32			21. 28. 56,81	C.		
	42 Capricorni ...	21,4	35,1	49,1	3,0	17,0	30,8	44,6	21. 33. 3,00				3,49			21. 33. 38,98	C.		
	B.A.C. 7562.....	53,6	7,2	20,9	34,5	....	....	....	21. 36. 34,54				34,99			21. 37. 10,49	C.		
	$c^1$ Capricorni.....	....	....	....	....	53,4	6,9	20,7	21. 36. 39,67				40,12			21. 37. 15,62	C.		
	B.A.C. 7617.....	57,1	10,8	24,6	38,3	52,1	5,8	19,6	21. 44. 38,33				38,78			21. 45. 14,29	C.		
	B. (w.) XXI. 1167.	40,3	54,0	7,6	21,4	....	....	....	21. 49. 21,30				21,74			21. 49. 57,25	C.		
	(k) B. (w.) XXI. 1169.	....	....	....	....	37,2	50,9	4,4	21. 49. 23,54				23,98			21. 49. 59,49	C.		
	$\alpha$ Aquarii.....	3,4	16,6	30,1	43,5	57,1	10,5	23,9	21. 57. 43,59				43,94	35,63		21. 58. 19,46	C.		
	$c^2$ Aquarii.....	34,1	48,0	1,8	15,7	29,5	43,1	57,0	22. 2. 15,60				16,06			22. 2. 51,59	C.		
	51 Aquarii.....	16,7	30,0	43,7	57,0	10,7	24,0	37,5	22. 15. 57,09				57,51			22. 16. 33,05	C.		
	B. (w.) XXII. 429	0,0	13,9	27,2	40,9	54,4	....	....	22. 19. 40,82				41,24			22. 20. 16,79	C.		
	B. (w.) XXII. 434.	....	....	....	....	2,5	16,0	29,6	22. 19. 48,91				49,33			22. 20. 24,88	C.		
	(h) B. (w.) XXII. 545.	58,5	....	25,3	38,6	....	6,0	19,4	22. 25. 38,88				39,29			22. 26. 14,84	C.		
	$\kappa$ Aquarii.....	57,8	11,2	24,7	38,1	51,7	5,2	18,8	22. 29. 38,22				38,63			22. 30. 14,19	C.		
	(l) B. (w.) XXII. 727.	16,2	29,7	43,1	56,8	10,4	23,8	37,3	22. 33. 56,76				57,18			22. 34. 32,74	C.		
	$\tau^1$ Aquarii.....	42,4	56,2	10,0	24,0	38,2	51,8	5,8	22. 39. 24,06				24,54			22. 40. 0,11	C.		
	$\tau^2$ Aquarii.....	....	....	....	18,1	32,2	45,9	59,8	22. 41. 18,16				18,63			22. 41. 54,20	C.		
	$\alpha$ Pegasi.....	....	28,2	41,8	55,8	10,0	23,4	37,4	22. 56. 55,83				56,10	35,74		22. 57. 31,69	C.		
	(m) Neptune.....	18,5	32,0	45,3	59,0	12,6	26,3	39,7	23. 4. 59,06				59,48			23. 5. 35,08	C.		
Aug. 30	⊙ 1 L.....	34,6	48,0	1,7	15,3	29,1	42,6	56,3	10. 32. 15,37				15,65		1,47	10. 32. 51,95	C.		
	⊙ 2 L.....	43,4	57,1	10,6	24,4	38,1	51,6	5,4	10. 34. 24,37				24,65			10. 35. 0,95	C.		
	(n) Polaris SP.....	47,0	37,0	15,0	7,5	53,0	35,5	19,0	13. 6. 4,86				6,87				C.		
	Polaris SP. M...	54,0	38,5	23,0	7,5	52,0	38,0	22,5	13. 6. 5,25				7,26				C.		
	(n) Spica.....	12,8	26,5	39,9	53,8	7,6	21,1	34,7	13. 16. 53,77				54,22	36,50		13. 17. 30,68	C.		
	(o) Arcturus.....	40,9	55,3	9,3	23,8	38,4	52,4	6,8	14. 8. 23,84				24,11	36,51		14. 9. 0,63	C.		
	$\epsilon$ Bootis.....	14,8	30,0	45,1	0,4	15,7	30,9	46,0	14. 38. 0,41				0,70	36,49		14. 38. 37,25	C.		
	$\alpha$ Coronæ.....	9,0	24,3	39,4	54,4	9,8	24,6	39,8	15. 27. 54,47				54,76	36,46		15. 28. 31,36	C.		
	$\alpha$ Serpentis.....	48,4	1,8	15,4	28,9	42,7	56,1	9,6	15. 36. 28,99				29,27	36,43		15. 37. 5,88	C.		
	$\delta$ Ophiuchi.....	25,8	39,0	52,6	5,9	19,7	33,0	46,6	16. 6. 6,09				6,47	36,62		16. 6. 43,11	C.		
	$\alpha$ Herculis.....	42,2	56,1	10,0	23,4	38,0	51,6	5,4	17. 7. 23,81				24,07	36,82		17. 8. 0,77	C.		
	$\alpha$ Ophiuchi.....	52,7	6,5	20,3	34,0	48,0	1,6	15,3	17. 27. 34,06				34,33	36,72		17. 28. 11,05	C.		
	$\alpha$ Lyrae.....	32,7	49,8	7,0	24,2	41,6	58,7	16,0	18. 31. 24,28				24,59			18. 32. 1,38	C.		
	B.A.C. 6376.....	5,9	20,1	34,6	48,8	3,2	17,4	31,7	18. 36. 48,82				49,34			18. 37. 26,13	C.		
	(p) H. C. 34917.....	43,0	57,3	11,4	25,5	....	54,0	8,1	18. 40. 25,61				26,12			18. 41. 2,92	C.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40<sup>s</sup>.308, - 26<sup>s</sup>.907, - 13<sup>s</sup>.520, - 0<sup>s</sup>.067, + 13<sup>s</sup>.579, + 26<sup>s</sup>.870, + 40<sup>s</sup>.353.

(a) Much tremor. (b) Cloudy. (c) Faint and tremulous. (d) Faint from cloud. (e) Very steady. (f) No definition. (g) Disturbance. (h) Doubtfully observed from being so faint. (i) Very faint. 'One follows about 20<sup>s</sup>,' viz. B. (w.) XXI. 54. (k) Very faint at times: the observation uncertain. (l) 'Another very faint of the same R.A. and greater N.P.D.,' probably No. 723 of Weisse. (m) 'Good.' (n) Great tremor. (o) Blazing. (p) 'A fainter follows about 5<sup>s</sup>.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.	"	"	"	s.	s.	s.	
Aug.30	$\beta$ Lyrae.....	17,8	33,9	49,9	6,0	22,4	38,1	54,3	18. 44. 6,06	+4,5	-0,5	+7,6	6,35	36,76	1,47	18. 44. 43,15	C.		
	$\xi^2$ Sagittarii.....	42,9	57,3	11,7	26,0	40,8	55,1	9,5	18. 48. 26,19				26,71			18. 49. 3,51	C.		
	H. C. 35497.....	11,1	25,3	39,6	53,6	....	....	....	18. 53. 53,82				54,33			18. 54. 31,14	C.		
	H. C. 35499.....	....	....	....	....	11,8	26,0	40,3	18. 53. 57,49				58,00			18. 54. 34,81	C.		
	$\zeta$ Aquilæ.....	25,2	39,0	53,0	6,8	20,8	34,5	48,5	18. 58. 6,83				7,09	36,84		18. 58. 43,90	C.		
	(a) * N.P.D.109°.25'	53,3	8,0	22,0	36,2	50,1	....	19,1	19. 2. 36,20				36,71			19. 3. 13,53	C.		
	$\delta$ Aquilæ.....	52,7	6,4	19,8	33,1	46,9	0,1	13,6	19. 17. 33,23				33,55			19. 18. 10,38	C.		
	(b) H. C. 36799.....	45,7	....	15,5	30,0	....	59,7	13,9	19. 21. 30,04				30,57			19. 22. 7,41	C.		
	(c) $\gamma$ Aquilæ.....	3,1	16,8	....	....	57,9	11,5	25,1	19. 38. 44,12				44,38	36,82		19. 39. 21,23	C.		
	(d) $\alpha$ Aquilæ.....	23,7	37,5	50,9	4,6	18,5	31,8	45,5	19. 43. 4,64				4,92	36,82		19. 43. 41,78	C.		
	$\eta$ Aquarii.....	49,0	2,8	....	30,6	44,7	58,4	12,3	20. 52. 30,65				31,13			20. 53. 8,06	C.		
	(e) H. C. 40850.....	16,2	29,8	43,4	....	11,7	25,0	38,7	20. 57. 57,46				57,92			20. 58. 34,86	C.		
	B. (w.) XXI. 43 ..	19,5	33,0	47,1	0,4	....	....	....	21. 3. 0,66				1,12			21. 3. 38,06	C.		
	(f) B. (w.) XXI. 54 ..	....	....	....	....	40,0	53,0	7,7	21. 3. 26,02				26,48			21. 4. 3,42	C.		
	B. (w.) XXI. 188 ..	....	11,0	25,0	38,8	52,8	6,6	....	21. 8. 38,85				39,32			21. 9. 16,27	C.		
	B. (w.) XXI. 214 ..	....	....	....	....	58,9	12,9	26,5	21. 9. 45,02				45,49			21. 10. 22,44	C.		
	$\eta$ Aquarii.....	6,3	19,9	33,8	47,4	1,1	14,7	28,5	21. 16. 47,39				47,84			21. 17. 24,79	C.		
	B. (w.) XXI. 441 ..	....	....	....	49,1	3,2	16,9	31,0	21. 18. 49,23				49,70			21. 19. 26,66	C.		
	$\beta$ Aquarii.....	36,8	50,2	3,7	17,4	31,0	44,5	58,0	21. 23. 17,37				17,78	37,05		21. 23. 54,74	C.		
	(g) B. (w.) XXI. 734 ..	....	5,9	19,8	33,2	47,0	....	14,1	21. 30. 33,28				33,72			21. 31. 10,69	C.		
	$\epsilon$ Pegasi.....	45,1	58,7	12,4	26,0	39,8	53,4	6,9	21. 36. 26,04				26,32			21. 37. 3,29	C.		
	B. (w.) XXI. 985 ..	57,1	11,3	25,2	39,0	53,4	....	21,0	21. 40. 39,15				39,65			21. 41. 16,63	C.		
	(h) B. (w.) XXI. 1051 ..	....	....	47,5	....	14,9	....	42,0	21. 44. 1,16				1,60			21. 44. 38,58	C.		
	B. (w.) XXI. 1167 ..	39,0	52,6	6,0	....	....	....	....	21. 49. 19,80				20,24			21. 49. 57,23	C.		
	B. (w.) XXI. 1169 ..	....	....	....	22,0	35,8	49,3	3,1	21. 49. 22,10				22,54			21. 49. 59,53	C.		
	B. (w.) XXI. 1256 ..	40,0	53,5	7,1	20,5	34,4	47,6	1,2	21. 53. 20,61				21,03			21. 53. 58,02	C.		
	B. (w.) XXII. 91 ..	57,9	11,8	25,9	39,8	53,9	7,4	21,5	22. 4. 39,75				40,23			22. 5. 17,23	C.		
	(e) H. C. 48764.....	....	9,5	23,1	....	50,4	4,0	17,7	22. 17. 36,75				37,20			22. 18. 14,22	C.		
	$\sigma$ Aquarii.....	39,0	52,8	6,5	20,3	34,2	47,7	1,4	22. 22. 20,27				20,73			22. 22. 57,75	C.		
	B. (w.) XXII. 545 ..	....	10,4	23,9	37,1	51,0	....	17,8	22. 25. 37,34				37,75			22. 26. 14,77	C.		
	$\kappa$ Aquarii.....	56,3	9,7	23,1	36,6	50,2	3,6	17,3	22. 29. 36,69				37,10			22. 30. 14,13	C.		
	B. (w.) XXII. 727 ..	14,7	28,1	41,6	55,1	8,9	22,1	35,8	22. 33. 55,19				55,61			22. 34. 32,64	C.		
	B. (w.) XXII. 814 ..	8,9	22,5	36,0	50,0	3,9	17,5	31,3	22. 37. 50,01				50,47			22. 38. 27,51	C.		
	$\tau^2$ Aquarii.....	35,0	48,7	2,7	16,4	30,6	44,4	58,2	22. 41. 16,57				17,04			22. 41. 54,08	C.		
	* N.P.D. 102°.49'	....	....	0,5	14,4	28,6	42,0	55,9	22. 53. 14,50				14,96			22. 53. 52,01	C.		
	(i) * N.P.D. 102°.49' B.	3,0	16,7	....	23,4	....	....	....	22. 53. 14,50				14,99			22. 53. 52,04	C.		
	$\alpha$ Pegasi.....	12,6	26,5	40,5	54,4	8,5	22,1	36,0	22. 56. 54,37				54,63	37,22		22. 57. 31,69	C.		
	Neptune.....	10,8	24,3	37,8	51,5	5,2	18,5	32,0	23. 4. 51,44				51,86			23. 5. 28,92	C.		
	Aug.31	$\odot$ 1 L.....	11,4	25,0	38,6	52,3	6,1	19,7	33,3	10. 35. 52,34				52,62		1,48	10. 36. 30,34	C.	
		$\odot$ 2 L.....	20,2	33,8	47,4	1,2	14,8	28,2	42,0	10. 38. 1,08				1,36			10. 38. 39,09	C.	
Arcturus.....		39,5	53,8	8,0	22,3	36,9	51,0	5,5	14. 8. 22,43				22,70	37,91		14. 9. 0,64	C.		
$\epsilon$ Bootis.....		13,5	28,6	43,7	58,7	14,3	29,2	44,5	14. 37. 58,93				59,22	37,96		14. 38. 37,19	C.		
$\alpha$ Coronæ.....		7,6	22,6	37,7	52,7	8,1	23,1	38,3	15. 27. 52,87				53,16	38,04		15. 28. 31,18	C.		
$\alpha$ Serpentis.....		46,8	0,2	13,7	27,3	41,1	54,5	8,0	15. 36. 27,37				27,65	38,04		15. 37. 5,68	C.		
$\delta$ Ursæ Minoris ..		....	....	....	47,0	40,5	23,3	....	18. 18. 49,73				49,53				C.		
51 (Hev.) Cephei SP.		....	33,5	12,5	55,5	37,0	16,0	....	18. 29. 54,72				55,97			18. 30. 34,18	C.		
$\beta$ Lyrae.....		16,6	32,5	48,5	4,5	20,9	36,7	52,9	18. 44. 4,66				4,95	38,14		18. 44. 43,18	C.		
$\zeta$ Aquilæ.....		23,8	37,6	51,5	5,4	19,5	33,0	47,0	18. 58. 5,40				5,66	38,25		18. 58. 43,90	C.		
(k) * N.P.D.109°.25'		....	6,1	20,5	34,7	49,2	3,3	17,7	19. 2. 34,80				35,32			19. 3. 13,56	C.		
H. C. 35955.....		....	....	....	34,4	49,1	3,3	17,5	19. 3. 34,67				35,19			19. 4. 13,44	C.		
H. C. 36308.....		5,9	20,4	34,6	48,8	3,4	17,3	31,6	19. 10. 48,86				49,38			19. 11. 27,63	C.		
$\delta$ Aquilæ.....		51,3	4,8	18,1	31,6	45,5	58,7	12,0	19. 17. 31,71				32,03			19. 18. 10,29	C.		
H. C. 36799.....		44,4	59,1	13,8	28,5	....	....	....	19. 21. 28,61				29,14			19. 22. 7,40	C.		
(l) H. C. 36814 ..		....	....	....	44,5	....	14,2	29,0	19. 21. 44,67				45,20			19. 22. 23,46	C.		
(m) H. C. 37306 ..		52,7	7,4	21,7	36,2	....	4,9	19,6	19. 32. 36,18				36,71			19. 33. 14,98	C.		
$\gamma$ Aquilæ.....		1,7	15,4	29,0	42,7	56,4	10,0	23,7	19. 38. 42,70				42,96	38,23		19. 39. 21,24	C.		
$\alpha$ Aquilæ.....		22,3	35,8	49,5	3,0	16,8	30,1	44,0	19. 43. 3,07				3,35	38,38		19. 43. 41,64	C.		
$\beta$ Aquilæ.....		51,5	5,0	18,4	31,9	45,6	59,1	12,8	19. 47. 32,04				32,32	38,36		19. 48. 10,61	C.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s.308$ ,  $-26^s.907$ ,  $-13^s.520$ ,  $-0^s.067$ ,  $+13^s.579$ ,  $+26^s.870$ ,  $+40^s.353$ .

(a) 'Not good; very faint. One precedes about 25', and another much fainter follows about 15'. This star was observed for H. C. 35955, which it precedes 1<sup>m</sup>. (See Aug. 31.) The N.P.D. is uncertain. (b) Wire VII was set down 3.9. 'Another fainter south-following by about 15'. (c) Cloudy. (d) Cloud at wire V. (e) Faint. (f) Very faint, and the observation doubtful. (g) Extremely faint. 'One equal north-following by about 10'. (h) Very faint and continually disappearing. (i) Observed with both instruments for Proserpine, which preceded: faint at times. (k) 'Brighter than the next.' The N.P.D. is uncertain. (l) 'South-following the preceding one.' See Aug. 30. (m) The recorded times have been increased 1<sup>m</sup>.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		"	"	"					
Aug. 31	B. (w.) XXI. 830 .	25,3	39,0	52,5	6,1	19,9	33,5	47,0	21. 34. 6,19	+4,5	-0,5	+7,6	6,63		1,48	21. 34. 45,03	C.
	45 Capricorni . . . . .				26,3	40,2	54,1	8,1	21. 35. 26,24				26,73			21. 36. 5,13	C.
	B. (w.) XXI. 966 .	54,0	7,6	21,4	35,2	49,1	2,9	16,6	21. 39. 35,26				35,72			21. 40. 14,43	C.
	B.A.C. 7617 . . . . .	54,4	8,0	21,6	35,6	49,4	2,9	16,7	21. 44. 35,51				35,97			21. 45. 14,38	C.
	B. (w.) XXI. 1240	55,1	8,9	22,6	36,6	50,7	4,4	18,4	21. 52. 36,67				37,14			21. 53. 15,56	C.
	(a) α Aquarii . . . . .	0,4	13,7	27,3	40,7	54,4	7,8	21,2	21. 57. 40,78				41,13	38,44		21. 58. 19,55	C.
	ρ Aquarii . . . . .	14,0		41,0	54,4	8,4	21,8	35,4	22. 11. 54,63				55,07			22. 12. 33,51	C.
	51 Aquarii . . . . .	13,7	27,1	40,6	54,0	7,8	21,3	34,8	22. 15. 54,19				54,61			22. 16. 33,05	C.
	B. (w.) XXI. 429	57,2	10,7	24,3	37,9				22. 19. 37,87				38,29			22. 20. 16,74	C.
	B. (w.) XXI. 434 .				46,0	59,8	13,2	26,7	22. 19. 46,11				46,53			22. 20. 24,98	C.
	B. (w.) XXI. 514 .	21,2	34,9		1,9	15,5	28,8	42,4	22. 24. 1,86				2,27			22. 24. 40,72	C.
	κ Aquarii . . . . .	55,0	8,4	21,8	35,2	49,1	2,3	15,7	22. 29. 35,36				35,77			22. 30. 14,23	C.
	(b) B. (w.) XXI. 729 .		28,6	42,0	55,6	9,7	23,1	37,0	22. 33. 55,86				56,30			22. 34. 34,76	C.
	τ <sup>1</sup> Aquarii . . . . .	39,5	53,4	7,4	21,1	35,3	49,0	3,0	22. 39. 21,24				21,72			22. 40. 0,19	C.
	(c) *N.P.D. 102° 53' B.	11,5	25,4	18,6	32,0				22. 52. 23,11				23,50			22. 53. 1,98	C.
	α Pegasi . . . . .	11,4	25,4	39,3	53,0	7,1	21,0	34,8	22. 56. 53,14				53,40	38,45		22. 57. 31,88	C.
	Neptune . . . . .	3,5	17,0	30,6	44,0	57,7	11,1	24,8	23. 4. 44,10				44,52			23. 5. 23,01	C.
Sept. 1	(a) ☉ 1 L. . . . .	48,2	1,7	15,2	28,9	42,8	56,1	9,8	10. 39. 28,96				29,22		1,56	10. 40. 8,44	B.
	☉ 2 L. . . . .	56,6	10,4	24,2	37,6	51,3	5,3	18,6	10. 41. 37,72				37,98			10. 42. 17,21	B.
	ε Pegasi . . . . .	42,3	56,2	9,3	22,9	37,0	50,4	4,2	21. 36. 23,18				23,44			21. 37. 3,38	B.
	B. (w.) XXI. 1036	31,9	45,6	59,3	12,8	26,3	40,0	53,6	21. 43. 12,78				13,21			21. 43. 53,15	B.
	B. (w.) XXI. 1167	36,2	49,6	3,3	16,8	30,6	44,2	57,8	21. 49. 16,93				17,36			21. 49. 57,31	B.
	H. C. 42937 . . . . .	3,5	17,0	30,7	44,2	58,2	11,8	25,2	21. 53. 44,37				44,81			21. 54. 24,76	B.
	α Aquarii . . . . .	58,8	12,4	26,1	39,2	52,7	6,2	19,7	21. 57. 39,30				39,64	39,94			
	Proserpine . . . . .		51,9	5,8	20,0		46,8	0,8	22. 51. 19,58				20,04			22. 52. 0,06	B.
	Proserpine B. . . . .	8,1	22,2	15,6	28,8				22. 51. 19,91				20,17			22. 52. 0,19	B.
	(d) α Pegasi . . . . .	9,9	23,8	37,6	51,4	5,6	19,4	33,4	22. 56. 51,58				51,83	40,03			
	Neptune . . . . .	56,1	9,6	23,2	36,6	50,3	3,9	17,3	23. 4. 36,72				37,13			23. 5. 17,16	B.
Sept. 2	(e) ☉ 1 L. . . . .	24,4	37,8	51,6	5,3	19,1	32,4	45,8	10. 43. 5,20				5,46		1,56	10. 43. 46,27	B.
	☉ 2 L. . . . .	33,4	46,6	0,2	13,8	27,6	41,0	54,8	10. 45. 13,91				14,17			10. 45. 54,98	B.
	(f) β Leonis . . . . .	14,0		41,7		9,2		37,6	11. 40. 55,60				55,84	40,86		11. 41. 36,71	B.
	μ <sup>1</sup> Sagittarii . . . . .	39,1	53,4	7,8	22,3	36,7	51,3	5,6	18. 4. 22,31				22,82	41,22		18. 5. 4,11	B.
	β Lyræ . . . . .	13,5	29,6	45,6	1,7	17,8	33,8	49,8	18. 44. 1,68				1,95	41,11		18. 44. 43,28	B.
	α Aquilæ . . . . .			46,1	59,8	13,8	27,3	41,0	19. 43. 0,01				0,27	41,44		19. 43. 41,66	B.
	β Aquilæ . . . . .	48,3	1,7	14,8	28,7	42,6	55,7	9,6	19. 47. 28,77				29,04	41,62		19. 48. 10,44	B.
	α Aquarii . . . . .	57,2	10,4	24,2	37,6	51,0	4,6	18,1	21. 57. 37,59				37,93	41,65		21. 58. 19,47	B.
	Proserpine . . . . .		58,2	11,8	26,7	39,9	53,8		22. 50. 26,09				26,55			22. 51. 8,15	B.
	(g) Proserpine B. . . . .	14,4	28,2	21,3	34,9				22. 50. 25,93				26,19			22. 51. 7,79	B.
	(h) α Pegasi . . . . .	8,4	22,3	35,9	50,2	4,2	17,7	31,9	22. 56. 50,08				50,33	41,54		22. 57. 31,93	B.
	Neptune . . . . .	48,1	1,5	15,2	28,6	42,6	56,0	9,7	23. 4. 28,82				29,23			23. 5. 10,84	B.
Sept. 4	(a) ☉ 1 L. . . . .	35,3	49,2	2,8	16,0	29,8	4,3	57,2	10. 50. 16,23			+6,7	16,46		1,54	10. 51. 0,32	B.
	☉ 2 L. . . . .	44,2	57,6	11,2	24,6	38,5	52,1	5,7	10. 52. 24,84				25,07			10. 53. 8,93	B.
	(a) Polaris SP. . . . .		33,8	12,5		49,5	28,5		13. 6. 1,32				2,42				
	(a)(i) Spica . . . . .		19,1	32,4	46,2	0,0	13,5		13. 16. 46,25				46,63	44,06		13. 17. 30,64	B.
	(d) Arcturus . . . . .	33,2	47,6	2,2	16,3	30,8	44,6	59,3	14. 8. 16,29				16,51	44,05		14. 9. 0,58	B.
	α Coronæ . . . . .	1,4	16,3	31,7	46,8	2,2	17,0	32,2	15. 27. 46,80				47,04	44,09		15. 28. 31,19	B.
	β Lyræ . . . . .	10,3	26,4	42,6	58,3	14,4	30,6	46,7	18. 43. 58,48				58,72	44,30		18. 44. 43,08	B.
	β Aquarii . . . . .	29,6	42,7	56,3	9,8	23,7	36,9	50,6	21. 23. 9,95				10,29	44,53		21. 23. 54,82	B.
	(k) Proserpine B. . . . .			32,8	46,4				22. 48. 37,38				37,52			22. 49. 22,14	B.
	(l) α Pegasi . . . . .	5,3	19,2	33,0	46,7	1,2	14,6	28,6	22. 56. 46,94				47,15	44,73		22. 57. 31,78	B.
	Neptune . . . . .	33,0	46,6	59,8	13,7	27,6	41,0	54,2	23. 4. 13,70				14,05			23. 4. 58,69	B.
Sept. 5	β Lyræ . . . . .	8,8	24,7	40,8	56,8	13,1	29,0	45,2	18. 43. 56,92				57,16	45,84	1,45	18. 44. 43,07	B.
	γ Aquilæ . . . . .	54,0	7,7	21,3	34,7	49,0	2,2	16,2	19. 38. 35,01				35,22	45,91		19. 39. 21,19	B.
	α Aquilæ . . . . .	14,7	28,2	41,7	55,3	9,3	22,6	36,2	19. 42. 55,43				55,65	46,03		19. 43. 41,62	B.
	β Aquilæ . . . . .	43,9	57,3	10,7	24,3	38,0	51,4	4,8	19. 47. 24,34				24,57	46,06		19. 48. 10,55	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,308, -26°,907, -13°,520, -0°,067, +13°,579, +26°,870, +40°,353.

(a) Tremor. (b) Very faint. (c) Too faint for the wires. Observed with both instruments for Proserpine, which was north-preceding and very near. (d) Indefinite. (e) Great motion. (f) Excessively faint: sometimes invisible. (g) 'No other object: observed best at the bars, being very faint.' The intervals of the transits at the wires are very irregular. (h) Flaring. (i) Faint. (k) Too faint for observation except at these bars: strong moon-light. (l) The noted times have been increased 1".



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Sept. 5	$\beta$ Aquarii.....	27,8	41,2	54,7	8,4	22,2	35,4	48,8	21.23.8,36	+4,5	-0,8	+6,7	8,70	46,12	1,45	21.23.54,77			B.
	(a) Proserpine.....	....	....	....	43,6	....	12,8	....	22.47.44,44				44,84			22.48.31,00			B.
	Proserpine B. ....	....	....	39,6	53,2	....	....	....	22.47.44,16				44,36			22.48.30,52			B.
	$\alpha$ Pegasi.....	4,2	17,7	31,4	45,6	59,6	13,4	27,2	22.56.45,59				45,80	46,08		22.57.31,97			B.
	(b) Neptune.....	25,6	39,1	52,4	6,2	19,8	33,2	46,8	23.4.6,16				6,51			23.4.52,69			B.
Sept. 6	$\odot$ 1 L.....	46,0	59,6	13,0	26,4	40,1	53,8	7,6	10.57.26,64				26,87		1,41	10.58.13,67			B.
	$\odot$ 2 L.....	54,3	7,8	21,3	35,1	48,6	2,2	15,9	10.59.35,03				35,26			11.0.22,07			B.
	$\beta$ Lyrae.....	....	23,4	39,6	55,6	11,9	27,8	....	18.43.55,67				55,91	47,07		18.44.43,17			B.
	B.A.C. 7237.....	57,6	12,6	27,2	42,1	57,0	11,6	26,2	20.43.42,04				42,50			20.44.29,88			B.
	B. (w.) xx. 1215 ..	17,8	31,8	45,5	59,2	13,3	27,2	41,0	20.46.59,40				59,81			20.47.47,19			B.
	B. (w.) xx. 1293 ..	9,4	23,1	37,1	51,0	5,1	19,0	32,9	20.49.51,08				51,50			20.50.38,89			B.
	B. (w.) xx. 1366 ..	5,1	19,1	32,8	47,0	1,1	14,8	28,8	20.52.46,96				47,38			20.53.34,77			B.
	(c) H. C. 40777.....	21,1	35,9	50,1	4,6	19,2	33,7	48,2	20.56.4,69				5,15			20.56.52,54			B.
	B. (w.) xx. 1530 ..	41,0	54,8	8,7	22,6	36,8	50,2	4,4	20.59.22,64				23,06			21.0.10,45			B.
	B. (w.) xxi. 28 ..	33,1	47,0	0,9	14,7	29,0	42,6	56,6	21.2.14,84				15,26			21.3.2,66			B.
	H. C. 41200.....	38,0	51,9	6,0	19,8	34,0	47,9	2,2	21.6.19,98				20,41			21.7.7,81			B.
	B. (w.) xxi. 223 ..	8,2	22,1	35,8	49,7	4,0	17,4	31,3	21.9.49,79				50,20			21.10.37,61			B.
	(d) * N.P.D. 102° 18'	....	44,2	58,1	12,1	25,8	39,6	....	21.12.11,97				12,37			21.12.59,78			B.
	B. (w.) xxi. 392 ..	56,8	10,7	24,4	38,4	52,6	6,4	20,2	21.16.38,50				38,92			21.17.26,33			B.
	B. (w.) xxi. 463 ..	48,1	1,9	15,6	29,1	43,3	57,0	10,7	21.19.29,39				29,79			21.20.17,20			B.
	$\beta$ Aquarii.....	26,3	39,8	53,4	6,8	20,6	34,0	47,7	21.23.6,94				7,28	47,54		21.23.54,70			B.
	$\alpha$ Pegasi.....	2,3	16,2	30,2	44,0	58,2	12,0	25,8	22.56.44,10				44,31	47,59		22.57.31,82			B.
	Neptune.....	17,9	31,2	44,9	58,3	12,2	25,4	39,2	23.3.58,45				58,80			23.4.46,32			B.
Sept. 8	$\odot$ 1 L.....	55,8	9,3	22,8	36,3	50,0	3,6	17,0	11.4.36,40		-1,9		36,57		1,52	11.5.26,37			B.
	$\odot$ 2 L.....	4,1	17,6	31,2	44,6	58,3	11,6	25,4	11.6.44,69				44,86			11.7.34,67			B.
	(e) Spica.....	59,2	13,0	26,8	40,2	54,2	....	21,2	13.16.40,33				40,68	49,98					B.
	$\beta$ Aquarii.....	23,6	37,1	50,6	3,9	17,8	31,0	44,7	21.23.4,10				4,41	50,41					B.
Sept. 9	(f) $\odot$ 1 L.....	30,2	43,6	57,2	10,7	24,4	38,2	50,8	11.8.10,73				10,91		1,44	11.9.2,28			B.
	$\odot$ 2 L.....	38,2	51,8	5,3	19,0	32,7	46,2	59,6	11.10.18,97				19,15			11.11.10,52			B.
	$\alpha^2$ Capricorni....	25,8	39,7	53,6	7,2	21,2	34,6	48,7	20.9.7,26				7,63	51,88		20.9.59,54			B.
	H. C. 40777.....	17,1	31,4	46,0	0,2	14,9	29,6	43,9	20.56.0,44				0,88			20.56.52,84			B.
	$\gamma$ Capricorni....	38,4	53,1	7,4	22,0	36,6	51,1	5,6	20.59.22,03				22,47			21.0.14,43			B.
	H. C. 41078.....	43,6	58,0	12,5	26,8	41,4	56,0	10,4	21.3.26,96				27,40			21.4.19,36			B.
	30 Capricorni ...	13,6	27,7	41,7	55,9	10,2	24,4	38,6	21.8.56,02				56,43			21.9.48,40			B.
	(g) * N.P.D. 102° 18'	26,2	40,1	53,8	7,3	21,4	35,0	48,7	21.12.7,50				7,87			21.12.59,84			B.
	$\alpha$ Aquarii.....	46,8	0,3	13,8	27,2	41,1	54,2	7,8	21.57.27,32				27,57	52,02		21.58.19,59			B.
	(h) Proserpine.....	....	43,7	57,1	11,3	25,3	38,7	....	22.44.11,23				11,61			22.45.3,67			B.
	Proserpine B. ....	0,4	14,2	7,7	21,0	....	....	....	22.44.12,06				12,24			22.45.4,30			B.
	$\alpha$ Pegasi.....	57,8	12,2	25,8	39,6	53,6	7,3	21,2	22.56.39,65				39,80	52,11		22.57.31,88			B.
	B. (w.) xxii. 1272 ..	51,3	5,1	18,5	32,2	45,7	59,0	12,6	22.59.32,05				32,31			23.0.24,39			B.
	Neptune.....	55,2	8,7	21,9	35,8	49,6	2,8	16,6	23.3.35,80				36,12			23.4.28,20			B.
Sept. 11	(i) $\odot$ 1 L.....	39,3	52,8	6,1	19,7	33,6	46,9	0,4	11.15.19,83			+7,8	20,09		1,39	11.16.14,04			B.
	$\odot$ 2 L.....	47,2	0,9	14,2	27,9	41,5	55,0	8,4	11.17.27,87				28,13			11.18.22,08			B.
	(k) Spica.....	55,2	8,9	22,3	36,2	50,0	3,4	17,1	13.16.36,16				36,57	54,07		13.17.30,64			B.
	$\gamma$ Aquilæ.....	45,7	59,2	13,0	26,6	40,2	53,9	7,2	19.38.26,54				26,74	54,31		19.39.21,18			B.
	$\alpha$ Aquilæ.....	6,2	19,7	33,2	47,0	0,7	14,2	27,7	19.42.46,96				47,18	54,43		19.43.41,62			B.
	$\beta$ Aquilæ.....	35,3	48,6	2,1	15,7	29,6	43,0	56,6	19.47.15,84				16,07	54,49		19.48.10,52			B.
	$\alpha^2$ Capricorni....	23,1	37,0	50,6	4,6	18,6	32,2	46,0	20.9.4,59				5,03	54,46		20.9.59,50			B.
	29 Capricorni ...	5,7	19,4	33,3	47,4	1,7	15,3	29,3	21.6.47,44				47,91			21.7.42,43			B.
	B. (w.) xxi. 304 ..	6,9	20,6	34,3	48,2	2,0	15,6	29,3	21.12.48,13				48,57			21.13.43,10			B.
	H. C. 41580.....	11,6	25,2	39,0	52,7	6,8	20,2	34,2	21.15.52,81				53,25			21.16.47,78			B.
	B. (w.) xxi. 463 ..	40,9	54,3	8,3	22,0	36,0	49,6	3,5	21.19.22,08				22,52			21.20.17,06			B.
	$\beta$ Aquarii.....	19,2	32,8	46,3	59,8	13,6	26,8	40,4	21.22.59,85				0,22	54,58		21.23.54,76			B.
	B. (w.) xxii. 434 ..	....	2,8	16,2	29,8	43,6	56,9	....	22.19.29,87				30,25			22.20.24,84			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,308, -26°,907, -13°,520, -0°,067, +13°,579, +26°,870, +40°,353.

(a) Not seen at first on account of strong moon-light: the times at the bars were considered good. A brighter object of the same R.A. and less N.P.D. by 5' was noticed. (b) Flaring and disappearing. (c) 'One of Mag. 10 south-preceding about 20°.' (d) Observed for B. (w.) xxi. 304. The N.P.D. is uncertain: see Sept. 9. (e) Disappearing at times from its great motion. (f) Extremely unsteady. (g) 'One of Mag. 9 north-following,' probably B. (w.) xxi. 304, the N.P.D. of which is 102° 15'. The N.P.D. above is conjectural: see the R.A. Catalogue. (h) Very faint. (i) Steady. (k) Great motion.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	h.	m.	s.	
Sept. 11	Proserpine B. ...	15,9	30,0	23,9	37,2	....	....	....	22. 42. 27,98	+4,5	-1,9	+7,8	28,17		1,39	22. 43. 22,79			B.
	α Pegasi .....	55,3	9,3	23,1	37,1	51,2	4,8	18,6	22. 56. 37,06				37,25	54,67		22. 57. 31,88			B.
	Neptune .....	40,1	53,7	7,2	20,8	34,6	47,9	1,6	23. 3. 20,84				21,22			23. 4. 15,86			B.
Sept. 12	⊙ 2 L. ....	21,4	35,2	48,4	2,1	15,8	29,1	42,4	11. 21. 2,05				2,32		1,41	11. 21. 57,71			B.
	ζ Aquilæ. ....	6,2	20,0	33,8	47,6	1,8	15,3	29,3	18. 57. 47,72				47,91	55,83					B.
	α² Capricorni. ...	21,6	35,4	49,2	3,1	17,2	30,9	44,6	20. 9. 3,14				3,58	55,90					B.
	B.A.C. 7145. ....	44,0	58,0	12,1	26,0	40,2	54,1	8,2	20. 31. 26,09				26,57			20. 32. 22,50			B.
	B. (w.) xx. 900. .	48,0	2,0	15,8	29,8	43,9	57,8	11,9	20. 34. 29,89				30,36			20. 35. 26,29			B.
	B.A.C. 7195. ....	7,3	21,7	36,4	51,2	6,2	20,8	35,4	20. 38. 51,28				51,80			20. 39. 47,73			B.
	B. (w.) xx. 1106. .	37,9	51,7	5,6	19,4	33,6	47,2	1,2	20. 42. 19,52				19,97			20. 43. 15,91			B.
	H. C. 40341. ....	41,8	56,3	10,8	25,3	39,7	54,2	8,3	20. 45. 25,20				25,71			20. 46. 21,65			B.
Sept. 13	⊙ 1 L. ....	47,6	1,1	14,4	27,9	41,9	55,2	8,6	11. 22. 28,10				28,35			11. 23. 25,15			B.
	(a) ⊙ 2 L. ....	55,6	9,1	22,4	36,0	49,8	3,0	16,6	11. 24. 36,07				36,32			11. 25. 33,12			B.
Sept. 15	(b) ⊙ 2 L. ....	3,9	17,3	30,8	44,3	57,9	11,3	24,9	11. 31. 44,34		-1,4		44,63		1,35	11. 32. 43,94			B.
	(c) Polaris SP. ....	....	....	56,8	51,0	....	17,7	5,7	13. 5. 47,75				51,88	59,39					B.
	(c) Arcturus. ....	....	....	....	0,9	15,2	29,2	43,6	14. 8. 0,76				0,98	59,46					B.
Sept. 16	⊙ 1 L. ....	29,3	43,1	56,8	9,7	23,9	36,8	....	11. 32. 56,53				10,31			11. 34. 10,97			B.
	⊙ 2 L. ....	37,4	50,8	4,4	18,3	31,8	45,2	58,6	11. 35. 18,07				18,36			11. 36. 19,02			B.
Sept. 19	(d) ⊙ 1 L. ....	....	....	38,8	51,9	....	19,2	32,8	11. 43. 52,23			+6,7	52,46		1,37	11. 44. 57,41			B.
	⊙ 2 L. ....	....	....	....	13,9	27,4	40,8	....	11. 46. 0,36				0,59			11. 47. 5,54			B.
Sept. 20	B. (w.) XXI. 397. .	....	54,6	8,2	22,2	35,8	49,4	....	21. 16. 22,05				22,42			21. 17. 29,28			B.
	B. (w.) XXI. 463. .	28,3	42,2	55,7	9,6	23,6	37,2	51,2	21. 19. 9,69				10,07			21. 20. 16,94			B.
	β Aquarii. ....	6,8	20,3	33,7	47,3	1,3	14,6	28,2	21. 22. 47,46				47,78	66,97		21. 23. 54,65			B.
	(e) B. (w.) XXI. 644. .	36,3	50,2	4,2	....	32,0	....	59,6	21. 26. 17,98				18,37			21. 27. 25,24			B.
	(f) * N.P.D. 98°. 10'. .	4,6	18,2	31,7	45,2	59,0	12,3	26,0	21. 54. 45,29				45,64			21. 55. 52,54			B.
	(c) α Aquarii. ....	32,2	45,4	58,8	12,0	26,0	39,3	52,6	21. 57. 12,33				12,60	66,96		21. 58. 19,50			B.
	α Pegasi. ....	43,3	56,9	11,0	24,9	38,9	52,8	6,6	22. 56. 24,91				25,08	66,86		22. 57. 32,04			B.
	(e)(g) Neptune. ....	....	47,3	0,8	14,3	....	41,6	55,2	23. 2. 14,46				14,79			23. 3. 21,76			B.
	α Andromedæ. .	0,4	15,7	30,9	46,3	1,8	17,0	32,2	23. 59. 46,33				46,53	66,96		0. 0. 53,55			B.
	(c) Regulus. ....	....	0,6	14,2	28,0	42,2	55,6	9,6	9. 59. 28,14				28,32	67,61	1,36	10. 0. 35,92			B.
Sept. 21	(c) ⊙ 1 L. ....	....	....	47,1	0,9	....	....	41,1	11. 51. 0,75				1,00			11. 52. 8,70			B.
	Arcturus. ....	9,6	23,9	38,0	52,2	6,9	20,9	35,3	14. 7. 52,40				52,58	67,81		14. 9. 0,41			B.
	α Aquarii. ....	30,6	44,2	57,4	10,8	24,6	37,8	51,3	21. 57. 10,95				11,22	68,33		21. 58. 19,49			B.
	(c) H. C. 45028. ....	....	....	55,7	9,2	22,8	36,0	49,7	22. 53. 9,19				9,52			22. 54. 17,85			B.
	(c)(h) α Pegasi. ....	41,7	55,6	9,4	23,3	37,4	51,2	5,1	22. 56. 23,38				23,55	68,39		22. 57. 31,88			B.
	(i) Neptune. ....	25,7	39,7	52,9	....	....	....	....	23. 2. 6,55				6,88			23. 3. 15,22			B.
	α Andromedæ. .	59,2	14,6	....	44,7	0,4	15,8	30,9	23. 59. 45,04				45,24	68,26		0. 0. 53,63			B.
	Regulus. ....	45,4	59,3	13,0	26,8	40,8	54,3	8,2	9. 59. 26,83				27,01	68,94	1,34				B.
Sept. 22	(c) ⊙ 1 L. ....	54,3	7,8	21,3	34,7	48,6	....	15,4	11. 54. 34,84				35,10			11. 55. 44,15			B.
	⊙ 2 L. ....	....	....	....	42,8	56,4	10,0	23,3	11. 56. 42,89				43,15			11. 57. 52,20			B.
	(c) Polaris SP. ....	23,0	....	....	45,6	....	....	....	13. 5. 42,75				45,07						B.
Sept. 24	Regulus. ....	41,4	55,2	9,0	22,7	36,6	50,3	4,0	9. 59. 22,74		-0,9	+9,4	23,06	72,94	1,39	10. 0. 35,97			B.
Sept. 25	(h) ⊙ 1 L. ....	37,7	....	4,8	....	....	45,1	....	12. 5. 18,21				18,64			12. 6. 31,67			B.
	⊙ 2 L. ....	....	59,4	....	....	....	....	6,8	12. 7. 26,36				26,79			12. 8. 39,82			B.
	(c) Polaris SP. ....	....	....	46,5	....	....	....	....	13. 5. 37,31				43,07						B.
	(l) H. C. 36999. ....	31,4	45,2	....	13,7	28,2	42,3	56,6	19. 25. 13,85				14,47			19. 26. 27,93			B.
	53 Sagittarii. ....	6,8	21,3	36,2	50,7	5,7	20,2	35,0	19. 29. 50,84				51,49			19. 31. 4,95			B.
	γ Aquilæ. ....	26,0	39,8	53,3	7,1	20,9	34,6	48,2	19. 38. 7,13				7,45	73,41		19. 39. 20,92			B.
	α Aquilæ. ....	....	0,4	14,0	27,6	41,4	54,7	8,0	19. 42. 27,56				27,90	73,52		19. 43. 41,37			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,308, -26°,907, -13°,520, -0°,067, +13°,579, +26°,870, +40°,353.

(a) 'Seized with a fit of coughing.' (b) The other Limb hid by cloud. (c) Cloudy. (d) Observed unsatisfactorily without a dark glass.  
 (e) Very faint from cloud. (f) The N.P.D. is that of H. C. 42963, for which this star was taken. See the R.A. Catalogue. (g) Wire I, set down 32,8, has been rejected as being discordant. (h) Faint. (i) Greatly obscured by cloud. (k) Without a dark glass. (l) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.					
		s.	s.	s.	s.	s.	s.	s.		h. m. s.	"	"					
Sept.25	$\beta$ Aquilæ.....	16,0	29,7	43,0	56,5	10,2	23,7	37,2	19. 46. 56,62	+4,5	-0,9	+9,4	56,97	73,40	1,39	19. 48. 10,45	B.
	(a) *N.P.D. 107°. 54'	....	1,8	15,6	29,4	44,2	58,3	12,4	20. 31. 29,89				30,49			20. 32. 44,01	B.
	*N.P.D. 167°. 54' B.	16,7	30,8	26,8	40,7	....	....	....	20. 31. 30,01				30,41			20. 32. 43,93	B.
	Neptune.....	57,8	11,3	25,2	38,4	52,3	5,4	19,2	23. 1. 38,52				39,03			23. 2. 52,70	B.
	(b) $\alpha$ Arietis.....	2,2	16,0	31,0	45,2	0,3	14,7	29,0	1. 57. 45,49				45,81	73,88		1. 58. 59,65	B.
Sept.26	$\odot$ 1 L.....	12,5	26,1	39,3	53,0	6,7	20,0	33,7	12. 8. 53,04				53,48		1,43	12. 10. 7,90	B.
	$\odot$ 2 L.....	20,7	34,3	47,8	1,3	15,1	28,3	41,9	12. 11. 1,34				1,78			12. 12. 16,20	B.
	(c) Polaris SP.....	13,5	1,0	43,0	....	22,5	6,7	53,5	13. 5. 33,82				39,58				B.
	(d) Arcturus.....	2,6	16,7	30,8	45,3	0,0	14,0	28,3	14. 7. 45,39				45,70	74,65			B.
	$\zeta$ Aquilæ.....	....	....	14,6	28,3	42,6	56,0	10,0	18. 57. 28,47				28,79	74,70			B.
	Neptune.....	50,7	4,2	17,7	31,2	44,8	58,3	12,1	23. 1. 31,28				31,79			23. 2. 46,79	B.
	Regulus.....	38,6	52,3	6,2	19,9	34,0	47,6	1,4	9. 59. 20,00				20,32	75,72	1,35	10. 0. 36,11	B.
Sept.27	$\odot$ 1 L.....	47,5	1,0	14,5	28,0	41,6	55,2	8,7	12. 13. 28,07				28,52			12. 13. 44,44	B.
	$\odot$ 2 L.....	56,0	9,3	23,0	36,2	50,0	3,2	16,8	12. 15. 36,36				36,81			12. 15. 52,73	B.
	$\alpha$ Herculis.....	2,3	16,2	30,0	43,8	58,0	11,7	25,8	17. 7. 43,97				44,29	16,11		17. 8. 0,48	B.
	$\gamma$ Aquilæ.....	23,3	36,7	50,5	4,0	18,0	31,6	45,2	19. 39. 4,19				4,51	16,31		19. 39. 20,85	B.
	$\alpha$ Aquilæ.....	43,9	57,4	11,3	24,6	38,4	52,0	5,5	19. 43. 24,73				25,07	16,31		19. 43. 41,41	B.
	$\beta$ Aquilæ.....	13,1	26,6	40,0	53,6	7,1	20,7	34,0	19. 47. 53,59				53,94	16,41		19. 48. 10,28	B.
	H. C. 41629.....	7,2	21,3	35,7	50,3	4,9	19,3	33,7	21. 17. 50,34				50,98			21. 18. 7,41	B.
	(e) H. C. 41760.....	44,0	58,2	12,2	25,6	39,8	....	....	21. 22. 25,86				26,45			21. 22. 42,88	B.
	$\beta$ Aquarii.....	....	10,6	24,2	37,6	51,3	4,7	....	21. 23. 37,69				38,19	16,50		21. 23. 54,62	B.
	$\alpha$ Aquarii.....	....	35,7	49,3	2,4	16,2	29,6	....	21. 58. 2,65				3,08	16,44		21. 58. 19,55	B.
	$\alpha$ Pegasi.....	33,3	47,2	1,1	15,2	29,2	42,7	56,7	22. 57. 15,06				15,38	16,56		22. 57. 31,90	B.
	Neptune.....	43,4	57,0	10,6	24,0	37,9	51,1	4,8	23. 2. 24,11				24,62			23. 2. 41,15	B.
	Sept.28	$\odot$ 1 L.....	22,6	36,2	49,6	3,3	16,7	29,8	43,7	12. 17. 3,13				3,58		1,16	12. 17. 20,77
$\odot$ 2 L.....		30,7	44,3	58,0	11,3	24,8	38,3	51,8	12. 19. 11,31				11,76			12. 19. 28,96	B.
$\alpha$ Coronæ.....		27,9	43,0	58,0	13,1	28,6	43,5	58,8	15. 28. 13,27				13,59	17,15		15. 28. 30,94	B.
$\gamma$ Aquilæ.....		22,0	35,6	49,0	2,8	16,4	30,3	44,0	19. 39. 2,87				3,19	17,62		19. 39. 20,74	B.
$\alpha$ Aquilæ.....		42,6	56,4	9,8	23,4	37,2	50,6	4,3	19. 43. 23,47				23,81	17,58		19. 43. 41,37	B.
(f) $\beta$ Aquilæ.....		11,9	25,0	38,8	52,3	6,0	19,4	33,1	19. 47. 52,35				52,70	17,63		19. 48. 10,26	B.
$\alpha^2$ Capricorni....		59,8	13,3	27,1	41,0	55,0	8,7	22,4	20. 9. 41,04				41,61	17,68		20. 9. 59,19	B.
(g) B. (w.) xx. 926..		17,2	....	44,7	58,7	12,8	26,8	40,9	20. 35. 58,86				59,45			20. 36. 17,05	B.
B.A.C. 7197.....		50,6	5,2	19,7	34,3	49,3	4,0	18,3	20. 39. 34,48				35,13			20. 39. 52,73	B.
B. (w.) xx. 1106..		15,8	29,8	43,6	57,6	11,7	25,6	39,3	20. 42. 57,63				58,21			20. 43. 15,81	B.
H. C. 40341.....		20,2	34,3	49,0	3,4	17,7	32,2	46,7	20. 46. 3,36				4,00			20. 46. 21,60	B.
H. C. 40465.....		21,7	36,8	50,7	4,6	19,7	34,3	48,5	20. 49. 5,19				5,84			20. 49. 23,45	B.
(h) * N.P.D. 104°. 4'		14,2	28,0	41,8	55,6	9,7	23,5	37,3	20. 51. 55,73				56,31			20. 52. 13,92	B.
(i) A. (o.) 21062....		2,3	16,3	30,9	45,2	0,0	14,2	28,2	20. 54. 45,30				45,93			20. 55. 3,54	B.
B. (w.) xx. 1486..		24,6	38,2	52,0	6,0	20,0	33,7	47,7	20. 58. 6,03				6,61			20. 58. 24,22	B.
B. (w.) xxi. 3....		45,0	59,0	13,2	26,3	40,3	54,0	7,8	21. 1. 26,52				27,09			21. 1. 44,71	B.
(k) B. (w.) xxii. 929.		52,8	6,4	19,9	33,8	47,6	1,0	15,0	22. 44. 33,78				34,32			22. 44. 52,02	B.
(l) B. (w.) xxii. 987.		....	49,9	3,4	17,0	30,8	44,2	....	22. 47. 17,07				17,60			22. 47. 35,30	B.
B. (w.) xxii. 1040		....	23,0	....	49,7	3,3	16,8	30,2	22. 49. 49,81				50,28			22. 50. 7,98	B.
(m) H. C. 45028.....		19,3	32,6	46,2	59,6	13,4	26,7	40,2	22. 53. 59,72				0,21			22. 54. 17,92	B.
$\alpha$ Pegasi.....	32,3	46,2	0,2	14,0	28,0	41,8	55,6	22. 57. 14,01				14,33	17,61		22. 57. 32,04	B.	
Neptune.....	36,8	50,2	3,9	17,3	31,3	44,6	58,1	23. 2. 17,46				17,97			23. 2. 35,68	B.	
Sept.29	$\odot$ 1 L.....	58,2	11,7	24,8	38,6	52,0	5,4	19,2	12. 20. 38,56				39,01		1,15	12. 20. 57,29	B.
	$\odot$ 2 L.....	6,7	20,0	33,4	47,0	0,8	14,2	27,6	12. 22. 47,10				47,55			12. 23. 5,83	B.
	$\alpha$ Coronæ.....	26,8	41,9	56,9	12,0	27,3	42,2	57,6	15. 28. 12,10				12,42	18,31		15. 28. 30,85	B.
	$\gamma$ Aquilæ.....	21,0	34,6	48,2	1,8	15,7	29,2	43,0	19. 39. 1,93				2,25	18,54		19. 39. 20,88	B.
	$\alpha$ Aquilæ.....	41,7	55,2	8,7	22,3	36,0	49,4	3,3	19. 43. 22,37				22,71	18,64		19. 43. 41,35	B.
	$\beta$ Aquilæ.....	10,9	24,2	37,7	51,3	5,0	18,3	31,8	19. 47. 51,31				51,66	18,65		19. 48. 10,30	B.
	B. (w.) xxi. 43..	37,2	50,9	4,8	18,6	32,6	46,0	59,8	21. 3. 18,56				19,12			21. 3. 37,82	B.
	(n) B. (w.) xxi. 129..	16,3	30,1	43,8	57,6	11,6	25,0	39,3	21. 6. 57,67				58,25			21. 7. 16,95	B.
	B. (w.) xxi. 214..	21,1	35,0	48,8	2,7	16,6	30,2	44,1	21. 10. 2,64				3,22			21. 10. 21,92	B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .  
 Sept. 26, 23<sup>h</sup>, Hardy was put forward 1<sup>m</sup>.

(a) A small star preceding B.A.C. 7151, used for comparison with Urania on Sept. 1. (b) Blazing. (c) Unsteady. (d) Indefinite.  
 (e) Cloudy. The time has been diminished 1<sup>m</sup> to agree with two observations of the same star in 1852. (f) The counting was 2<sup>s</sup> slow. (g) Faint.  
 (h) The N.P.D. is that of H. C. 40599, for which the star was taken. See the R.A. Catalogue. (i) Observed for H. C. 40736, but is not in that Catalogue.  
 (k) Before this observation an attempt was made to observe B. (w.) xxii. 897, but nothing was seen in the place though the sky was clear. (l) 'High in the field.' The observer had set for No. 1006, the N.P.D. of which is 9' less. (m) 'Seemed oblong.' (n) Very faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h.	m.	s.	
Sept. 29	B. (w.) XXI. 696..	32,6	46,4	0,4	13,7	28,1	41,7	....	21. 29. 14,07	+4,5	-0,9	+9,4	14,64		1,15	21. 29. 33,36			B.
	B. (w.) XXI. 696 B	3,2	16,7	10,2	23,8	....	....	....	21. 29. 14,71				15,08			21. 29. 33,80			B.
	B. (w.) XXI. 814..	....	3,8	17,2	31,3	44,7	58,0	....	21. 33. 31,01				31,55			21. 33. 50,27			B.
	c <sup>1</sup> Capricorni....	15,2	28,8	42,3	56,0	9,9	23,3	37,0	21. 36. 56,07				56,61			21. 37. 15,34			B.
	B. (w.) XXI. 966..	....	26,8	40,6	54,6	8,3	22,0	....	21. 39. 54,47				55,03			21. 40. 13,76			B.
	H. C. 42562....	....	22,3	35,7	49,5	3,3	17,0	....	21. 42. 49,57				50,12			21. 43. 8,85			B.
	α Aquarii .....	19,9	33,2	46,7	0,2	13,8	27,2	40,6	21. 58. 0,22				0,65	18,85		21. 58. 19,39			B.
	B. (w.) XXII. 962.	5,3	18,8	32,2	45,7	59,4	12,9	26,6	22. 45. 45,84				46,35			22. 46. 5,13			B.
	(a) B.A.C. 7993....	46,4	59,8	13,3	26,9	40,7	54,0	7,6	22. 49. 26,96				27,47			22. 49. 46,25			B.
	B. (w.) XXII. 1109	7,2	20,9	34,1	47,7	1,3	14,9	28,2	22. 52. 47,76				48,26			22. 53. 7,05			B.
	α Pegasi.....	31,2	44,8	58,8	12,6	27,0	40,4	54,3	22. 57. 12,73				13,05	18,89		22. 57. 31,84			B.
	Neptune.....	29,9	43,6	57,2	10,6	24,4	37,8	51,2	23. 2. 10,67				11,18			23. 2. 29,97			B.
	B. (w.) XXIII. 263	12,7	26,2	39,6	53,2	6,8	20,3	34,0	23. 12. 53,26				53,77			23. 13. 12,57			B.
	B. (w.) XXIII. 358	58,2	11,6	24,8	38,3	51,8	5,4	18,7	23. 17. 38,40				38,84			23. 17. 57,65			B.
	B.A.C. 8184....	2,1	15,6	29,0	42,6	56,2	9,5	23,0	23. 21. 42,57				43,07			23. 22. 1,88			B.
Sept. 30	⊙ 1 L. ....	33,8	47,5	0,7	14,3	27,9	41,6	54,8	12. 24. 14,37				14,83		1,32	12. 24. 34,26			B.
	⊙ 2 L. ....	42,6	56,1	9,3	22,8	36,6	50,0	3,4	12. 26. 22,97				23,43			12. 26. 42,86			B.
	ρ <sup>3</sup> Sagittarii....	18,8	33,1	46,9	1,3	15,7	29,8	43,8	19. 13. 1,34				1,96			19. 13. 21,77			B.
	χ <sup>3</sup> Sagittarii....	36,6	51,3	6,2	20,9	35,8	50,1	5,2	19. 16. 20,87				21,52			19. 16. 41,33			B.
	(b) H. C. 36777....	27,4	41,8	55,2	....	24,7	39,0	53,4	19. 21. 10,24				10,87			19. 21. 30,68			B.
	B.A.C. 6707....	54,2	8,3	22,6	36,9	51,4	5,3	19,7	19. 27. 36,92				37,54			19. 27. 57,36			B.
	γ Aquilæ .....	19,6	32,4	47,0	0,7	14,6	28,2	41,7	19. 39. 0,74				1,06	19,72		19. 39. 20,89			B.
	α Aquilæ.....	40,4	53,8	7,5	20,9	34,7	48,4	2,2	19. 43. 21,13				21,47	19,87		19. 43. 41,31			B.
	β Aquilæ.....	9,7	23,0	36,5	49,8	3,7	17,3	30,7	19. 47. 50,10				50,45	19,85		19. 48. 10,29			B.
	B. (w.) XXI. 155..	....	13,8	27,6	41,3	55,2	9,1	....	21. 7. 41,41				41,99			21. 8. 1,90			B.
	B. (w.) XXI. 248..	....	....	0,6	14,6	29,2	....	56,0	21. 11. 14,75				15,31			21. 11. 35,23			B.
	B. (w.) XXI. 248 B.	4,0	17,6	11,0	24,4	....	....	....	21. 11. 15,48				15,84			21. 11. 35,76			B.
	(d) B. (w.) XXI. 463..	....	....	42,8	....	10,3	23,9	37,7	21. 19. 56,46				57,02			21. 20. 16,94			B.
	β Aquarii .....	53,6	7,2	20,5	34,2	47,7	1,3	14,6	21. 23. 34,16				34,66	20,01		21. 23. 54,59			B.
	(e) B. (w.) XXI. 650..	34,2	....	2,2	....	30,0	43,8	57,7	21. 27. 16,03				16,61			21. 28. 36,54			B.
	Neptune.....	23,1	36,7	50,0	3,9	17,7	31,0	44,6	23. 2. 3,86				4,37			23. 2. 24,39			B.
Oct. 2	⊙ 1 L.....	45,6	59,3	12,6	25,8	39,8	53,3	6,8	12. 31. 26,17		-1,4	+9,0	26,60		1,46	12. 31. 49,12			B.
	⊙ 2 L.....	54,3	7,4	21,0	34,4	48,3	1,8	15,5	12. 33. 34,67				35,10			12. 33. 57,62			B.
	(f) Arcturus.....	54,6	8,8	23,2	37,3	51,8	6,2	20,3	14. 8. 37,46				37,73	22,59		14. 9. 0,35			B.
	α Aquilæ.....	37,3	51,0	4,5	18,0	31,7	45,3	58,8	19. 43. 18,09				18,39	22,91		19. 43. 41,35			B.
	β Aquilæ.....	6,6	20,0	33,3	47,0	0,8	14,0	27,7	19. 47. 47,06				47,37	22,90		19. 48. 10,34			B.
	α <sup>2</sup> Capricorni....	54,2	8,1	21,8	35,6	49,6	3,3	17,0	20. 9. 35,66				36,19	23,04		20. 9. 59,18			B.
	H. C. 39425....	19,8	32,8	47,8	1,9	16,0	29,8	44,1	20. 22. 1,88				2,45			20. 22. 25,45			B.
	(g) B. (w.) XX. 648..	....	17,1	30,6	45,1	58,7	....	26,6	20. 25. 44,85				45,39			20. 26. 8,39			B.
	B.A.C. 7115....	28,6	42,9	56,8	11,0	25,2	39,1	53,3	20. 29. 10,98				11,55			20. 29. 34,56			B.
	(h) B.A.C. 7151....	58,9	13,0	27,0	41,1	55,6	9,6	23,7	20. 32. 41,27				41,84			20. 33. 4,85			B.
	B. (w.) XX. 950..	10,2	24,2	37,9	51,9	6,1	20,0	33,9	20. 36. 52,03				52,59			20. 37. 15,60			B.
	H. C. 41000....	8,8	22,8	36,8	50,6	5,2	19,2	33,0	21. 1. 50,91				51,48			21. 2. 14,52			B.
	(i) B. (w.) XXI. 90..	36,8	....	4,4	....	31,9	....	0,6	21. 5. 18,40				18,93			21. 5. 41,97			B.
	(k) B. (w.) XXI. 223 B.	2,4	16,1	10,0	23,5	....	....	....	21. 10. 14,24				14,52			21. 10. 37,57			B.
	H. C. 41580....	42,3	56,4	10,0	24,0	38,1	51,5	5,7	21. 16. 24,00				24,52			21. 16. 47,58			B.
	B. (w.) XXI. 463..	12,1	25,8	39,5	53,3	7,2	20,8	34,7	21. 19. 53,34				53,86			21. 20. 16,92			B.
	β Aquarii .....	50,5	4,1	17,6	31,0	44,7	58,2	11,6	21. 23. 31,10				31,56	23,09		21. 23. 54,62			B.
	H. C. 42562....	4,2	18,0	31,3	45,0	59,2	12,6	26,6	21. 42. 45,27				45,78			21. 43. 8,86			B.
	H. C. 42562 B...	34,6	47,9	40,7	53,9	....	....	....	21. 42. 45,50				45,81			21. 43. 8,89			B.
	(l) B. (w.) XXI. 1115 B.	0,3	14,2	7,8	21,2	....	....	....	21. 47. 12,11				12,38			21. 47. 35,47			B.
	(m) B. (w.) XXII. 571 B.	48,1	1,4	52,2	5,7	....	....	....	22. 26. 58,06				58,26			22. 27. 21,39			B.
	(n) H. C. 45028....	13,6	27,2	40,6	54,0	7,7	21,0	34,6	22. 53. 54,10				54,55			22. 54. 17,70			B.
	α Pegasi.....	26,7	40,6	54,3	8,3	22,5	36,3	50,1	22. 57. 8,40				8,67	23,25		22. 57. 31,83			B.
	Neptune.....	9,3	22,7	36,2	49,8	3,5	17,0	30,4	23. 1. 49,85				50,33			23. 2. 13,49			B.
	B. (w.) XXIII. 109	33,8	47,3	0,9	14,4	28,0	41,9	55,6	23. 6. 14,56				15,06			23. 6. 38,23			B.
	B. (w.) XXIII. 187	4,0	17,3	30,7	44,1	57,9	11,1	24,6	23. 9. 44,24				44,65			23. 10. 7,82			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) The observer thought it appeared 'oblong.' (b) Observed doubtfully from its faintness. (c) Very faint. The time at the first bar was set down 14.0. (d) Disappearing at times. (e) The recorded time has been diminished 1<sup>m</sup>. The star is II. C. 41993. (f) Flaring. (g) Faint at times. (h) 'One of the same N.P.D. precedes about 15<sup>s</sup>.' (i) Faint. (k) Very faint from moon-light. (l) 'One of the same N.P.D. followed 21<sup>s</sup>.' (m) The moon near. (n) The recorded time was 1<sup>m</sup> greater.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"							
Oct. 3	⊙ 1 L. ....	21,7	34,9	48,6	2,3	15,8	29,6	42,9	12.35.2,24	+4,5	-1,4	+9,0	2,68		1,38	12.35.26,64			B.
	⊙ 2 L. ....	30,4	44,0	57,6	11,2	24,6	38,0	51,7	12.37.11,07				11,50			12.37.35,47			B.
	Polaris SP. ....	5,0	56,5	...	29,5	14,4	59,5	...	13.6.26,59				32,70			13.6.56,69			B.
	Arcturus ....	53,0	7,3	21,7	36,0	50,5	4,8	18,9	14.8.36,03				36,30	24,02		14.9.0,35			B.
	γ Aquilæ. ....	15,3	28,8	42,4	56,0	10,0	23,6	37,3	19.38.56,20				56,48	24,25		19.39.20,85			B.
	α Aquilæ. ....	3,0	49,4	2,9	16,6	30,3	43,8	57,5	19.43.16,64				16,94	24,24		19.43.41,31			B.
	β Aquilæ. ....	5,0	18,3	32,0	45,6	59,2	12,6	26,0	19.47.45,53				45,84	24,41		19.48.10,22			B.
	α* Capricorni ....	52,8	6,5	20,3	34,1	48,2	1,8	15,8	20.9.34,21				34,74	24,48		20.9.59,14			B.
	B. (w.) xx. 420 B.	51,5	5,2	59,6	13,1	...	...	...	20.17.3,59				3,88			20.17.28,29			B.
	(a) B.A.C. 7053. ....	24,6	38,8	53,1	7,2	21,7	35,8	50,1	20.21.7,33				7,91			20.21.32,32			B.
	B. (w.) xx. 612. ....	38,0	52,0	5,6	19,6	33,6	47,2	1,2	20.24.19,60				20,14			20.24.44,55			B.
	(b) B.A.C. 7102. ....	53,1	7,7	21,8	36,3	51,0	5,3	19,6	20.27.36,40				37,00			20.28.1,42			B.
	(c) B. (w.) xx. 973. ....	8,1	...	35,9	49,7	3,2	17,4	31,5	20.37.49,69				50,22			20.38.14,65			B.
	B. (w.) xx. 1068. ....	46,8	0,8	14,6	28,3	42,7	56,3	10,2	20.41.28,53				29,07			20.41.53,50			B.
	B. (w.) xx. 1157. ....	23,2	37,2	51,1	4,9	19,2	32,6	46,9	20.45.5,01				5,56			20.45.29,99			B.
	B. (w.) xxi. 924. ....	19,9	33,5	47,3	1,2	15,2	28,9	42,6	21.38.1,22				1,75			21.38.26,23			B.
	H. C. 42562. ....	2,7	15,9	30,2	43,9	57,7	11,3	25,0	21.42.43,81				44,32			21.43.8,81			B.
	(d) B. (w.) xxi. 1192. ....	39,8	53,2	...	...	35,2	49,2	2,6	21.50.21,21				21,74			21.50.46,24			B.
	α Pegasi. ....	25,2	38,8	53,3	6,8	21,0	34,7	48,7	22.57.6,93				7,20	24,72		22.57.31,76			B.
	Neptune. ....	2,3	15,9	29,4	43,3	57,0	10,2	23,8	23.1.43,13				43,60			23.2.8,17			B.
	β Ceti. ....	10,7	24,7	39,0	53,3	7,6	21,6	35,7	0.35.53,23				53,81	24,67		0.36.18,47			B.
	(e) Polaris. ....	15,5	3,0	48,5	32,5	25,5	6,5	57,5	1.6.35,57				30,76			1.6.55,44			B.
Oct. 4	⊙ 1 L. ....	58,4	11,8	25,4	38,8	52,6	5,9	19,6	12.38.38,93				39,37		1,33	12.39.4,70			B.
	⊙ 2 L. ....	7,2	20,6	34,2	47,8	1,4	14,9	28,3	12.40.47,77				48,21			12.41.13,54			B.
	Polaris SP. ....	...	51,5	33,0	24,5	10,5	57,5	...	13.6.23,06				29,17			13.6.54,53			B.
	Arcturus. ....	51,7	6,0	20,2	34,6	48,8	3,3	17,6	14.8.34,60				34,87	25,45					B.
	α Andromedæ ...	41,4	56,8	12,1	27,4	42,7	57,8	13,3	0.0.27,36				27,63	25,92					B.
Oct. 5	(f) ⊙ 1 L. ....	35,6	48,8	2,4	15,9	...	43,0	56,4	12.42.15,96				16,41		1,32	12.42.43,05			B.
	⊙ 2 L. ....	44,4	58,2	11,6	25,0	38,7	52,0	5,8	12.44.25,10				25,55			12.44.52,19			B.
	γ Aquilæ. ....	12,5	26,2	39,7	53,4	7,3	20,7	34,4	19.38.53,46				53,74	26,96		19.39.20,76			B.
	α Aquilæ. ....	33,2	46,7	0,3	13,7	27,6	41,1	54,8	19.43.13,91				14,21	27,04		19.43.41,24			B.
	(g) β Aquilæ. ....	...	...	...	42,6	56,6	9,9	23,4	19.47.42,83				43,14	27,08		19.48.10,17			B.
	(h) B. (w.) xx. 686. ....	...	21,2	34,8	49,3	2,9	16,4	...	20.26.48,93				49,47			20.27.16,53			B.
	(i) B.A.C. 7151. ....	54,6	8,8	22,9	37,0	51,3	5,4	19,6	20.32.37,09				37,66			20.33.4,73			B.
	B. (w.) xx. 973. ....	6,0	19,6	33,4	47,2	1,2	15,0	28,8	20.37.47,32				47,85			20.38.14,92			B.
	(k) B. (w.) xx. 1106. ....	6,3	20,2	34,0	47,7	2,2	16,0	29,7	20.42.48,02				48,56			20.43.15,64			B.
	B. (w.) xx. 1275. ....	53,2	6,5	20,6	34,4	48,4	2,2	16,2	20.49.34,50				35,04			20.50.2,13			B.
	B. (w.) xxi. 155. ....	...	6,4	20,3	34,2	48,2	1,8	...	21.7.34,19				34,73			21.8.1,83			B.
	H. C. 41349. ....	41,0	55,4	9,8	24,0	38,8	53,0	7,3	21.10.24,18				24,78			21.10.51,89			B.
	(h)(l) B. (w.) xxi. 911. ....	41,6	55,7	9,6	23,6	37,4	51,4	...	21.37.23,54				24,10			21.37.51,23			B.
	α Aquarii. ....	...	25,1	38,4	51,8	5,6	18,8	...	21.57.51,95				52,34	27,11		21.58.19,49			B.
Oct. 7	⊙ 1 L. ....	50,6	3,9	17,6	31,3	44,9	58,4	12,0	12.49.31,24			+8,4	31,66		1,36	12.50.1,04			B.
	⊙ 2 L. ....	0,0	13,3	27,0	40,6	54,0	7,6	21,3	12.51.40,54				40,96			12.52.10,34			B.
	(m) Polaris SP. ....	59,5	...	...	...	...	58,5	41,5	13.6.22,12				27,24			13.6.56,63			B.
	(n) γ Aquilæ. ....	9,6	23,3	36,8	50,6	4,6	18,2	31,7	19.38.50,68				50,93	29,74		19.39.20,69			B.
	α Aquilæ. ....	30,3	43,8	57,6	11,3	25,2	38,3	52,2	19.43.11,24				11,51	29,71		19.43.41,28			B.
	β Aquilæ. ....	59,6	12,8	26,6	39,9	53,7	7,2	20,7	19.47.40,08				40,36	29,83		19.48.10,13			B.
	(o) B. (w.) xxi. 1231. ....	41,8	55,3	...	22,8	36,0	...	3,2	21.52.22,52				22,97			21.52.52,86			B.
	B. (w.) xxi. 1300. ....	...	18,6	32,7	46,2	0,5	13,9	...	21.55.46,39				46,89			21.56.16,78			B.
	α Aquarii. ....	9,0	22,2	35,6	49,0	2,7	16,0	29,5	21.57.49,15				49,51	29,93		21.58.19,40			B.
	(o)(p) B. (w.) xxi. 1410. ....	...	22,8	36,7	50,8	4,0	...	...	22.0.50,43				50,91			22.1.20,81			B.
Oct. 9	(q) Polaris SP. ....	...	46,0	23,6	19,5	6,0	50,0	...	13.6.16,68			-1,3	21,59		1,46	13.6.54,92			B.
Oct. 10	⊙ 1 L. ....	46,6	0,0	13,5	27,2	40,8	54,3	7,8	13.0.27,17				27,61			13.1.0,93			B.
	⊙ 2 L. ....	56,0	9,7	23,2	36,8	50,6	4,0	17,7	13.2.36,86				37,30			13.3.10,62			B.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) 'The south-preceding of two.' The other is α Capricorni. (b) 'One of Mag. 9.10 followed about 20<sup>s</sup>.' The hour and minute were not set down and have been supplied conjecturally. (c) 'Two fainter of the same N.P.D. followed.' (d) Bright moon-light. (e) Blazing and at times clouded. (f) High wind. (g) Faint from cloud. (h) Cloudy. (i) 'One of Mag. 8.9 preceding.' (k) 'Alone.' (l) The recorded time has been diminished 1<sup>m</sup>, the observation of Oct. 18, 1853, agreeing with B. (w.) (m) Interruption by cloud: at these wires the star was bright and steady. (n) Misty cloud over the sky, and the star diffused. (o) Cloudy at these times, and generally during the evening. (p) 'One preceding.' (q) Bright and steady.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.	
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.								
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.		
Oct. 10	Arcturus.....	43,8	58,0	12,2	26,6	41,0	55,3	9,6	14. 8. 26,64	+4,5	-1,3	+8,4	26,89	33,41	1,46				B.	
	(a) $\alpha$ Andromedæ ...	....	48,7	4,0	19,3	34,7	....	5,2	0. 0. 19,33				19,59	33,97					B.	
	(b) Polaris.....	....	....	37,5	23,5	....	....	....	1. 6. 26,05				22,38			1. 6. 56,44			B.	
Oct. 11	(c) $\odot$ 1 L.....	25,8	39,6	53,0	6,8	....	....	....	13. 4. 6,70				7,14		1,47	13. 4. 41,95			B.	
	$\alpha$ Ophiuchi.....	53,8	7,6	21,2	35,0	49,0	2,7	16,4	17. 27. 35,10				35,36	34,97		17. 28. 10,44			B.	
	$\gamma$ Aquilæ.....	4,2	17,8	31,3	45,1	59,1	12,4	26,0	19. 38. 45,13				45,39	35,21		19. 39. 20,60			B.	
	(d) H. C. 37659.....	....	....	44,6	59,4	14,2	28,6	43,1	19. 40. 59,36				59,93			19. 41. 35,15			B.	
	$\alpha$ Aquilæ.....	24,6	38,3	51,6	5,5	19,3	32,7	46,4	19. 43. 5,49				5,77	35,38		19. 43. 40,99			B.	
	$\beta$ Aquilæ.....	54,0	7,6	21,1	34,6	48,2	1,8	15,2	19. 47. 34,64				34,92	35,20		19. 48. 10,14			B.	
	$\alpha$ Pegasi.....	14,6	28,3	42,3	56,3	10,3	23,9	38,0	22. 56. 56,24				56,50	35,38		22. 57. 31,92			B.	
	(e) Neptune.....	11,2	24,7	38,2	51,8	5,5	19,1	32,6	23. 0. 51,87				52,31			23. 1. 27,73			B.	
Oct. 12	(f) $\odot$ 1 L.....	6,0	19,6	32,8	46,7	0,6	14,0	27,7	13. 7. 46,77				47,21		1,45	13. 8. 23,48			B.	
	$\odot$ 2 L.....	15,8	29,4	43,0	56,3	10,2	23,7	37,3	13. 9. 56,53				56,97			13. 10. 33,25			B.	
	(g) Arcturus.....	....	55,1	9,3	23,8	....	....	....	14. 8. 23,76				24,01	36,29		14. 9. 0,35			B.	
	(h) $\alpha$ Coronæ.....	8,9	23,8	38,9	53,9	9,2	....	....	15. 27. 54,06				54,32	36,25		15. 28. 30,73			B.	
	$\alpha^2$ Capricorni....	40,6	54,1	8,0	21,9	35,8	49,6	3,3	20. 9. 21,90				22,39	36,69		20. 9. 59,09			B.	
	B. (w.) xx. 973..	56,2	10,2	23,9	37,7	51,6	5,2	19,1	20. 37. 37,70				38,19			20. 38. 14,92			B.	
	H. C. 40191.....	9,2	23,8	38,2	52,6	7,3	21,8	36,4	20. 41. 52,75				53,32			20. 42. 30,05			B.	
	B. (w.) xx. 1157..	11,0	25,1	38,7	52,6	6,8	20,6	34,6	20. 44. 52,77				53,28			20. 45. 30,02			B.	
	(i) H. C. 40437.....	11,8	26,6	41,2	....	10,7	25,3	40,4	20. 47. 55,99				56,56			20. 48. 33,30			B.	
	B. (w.) xx. 1208..	....	....	25,1	38,8	53,1	6,7	20,6	20. 50. 38,96				39,47			20. 51. 16,21			B.	
	H. C. 40736.....	13,9	28,3	42,7	57,0	11,6	25,7	40,1	20. 54. 57,05				57,58			20. 55. 34,33			B.	
	B. (w.) xxi. 1049.	10,2	23,9	....	50,8	4,9	18,2	31,8	21. 43. 51,02				51,48			21. 44. 28,27			B.	
	(k) B. (w.) xxi. 1233.	39,3	53,3	7,2	20,8	34,4	48,3	2,2	22. 52. 20,78				21,27			21. 52. 58,07			B.	
	$\alpha$ Aquarii.....	1,7	15,4	28,6	41,8	55,8	9,2	22,7	21. 57. 42,17				42,53	36,86		21. 58. 19,34			B.	
	H. C. 45028.....	59,9	13,6	26,7	40,3	54,0	7,0	20,9	22. 53. 40,34				40,76			22. 54. 17,62			B.	
	$\alpha$ Pegasi.....	12,7	26,7	40,7	54,4	8,6	22,6	36,6	22. 56. 54,61				54,86	37,01		22. 57. 31,73			B.	
	Neptune.....	5,1	18,1	31,8	45,6	59,2	12,6	26,2	23. 0. 45,51				45,95			23. 1. 22,82			B.	
Oct. 13	$\odot$ 1 L.....	46,3	59,9	13,6	27,0	40,9	54,3	7,9	13. 11. 27,13				27,59		1,41	13. 12. 5,31			B.	
	$\odot$ 2 L.....	56,3	10,0	23,4	37,2	50,8	4,3	18,0	13. 13. 37,15				37,61			13. 14. 15,33			B.	
	$\alpha^2$ Capricorni....	....	....	6,7	....	34,2	47,9	2,0	20. 9. 20,44				20,93	38,13					B.	
Oct. 15	Polaris SP.....	47,5	....	16,5	10,5	57,0	....	27,5	13. 6. 9,41			+8,9	15,15		1,22				B.	
Oct. 16	Polaris SP. M...	55,5	41,0	26,0	10,5	54,5	40,5	25,5	13. 6. 8,04				13,78						B.	
	(l) Polaris SP. M...	12,5	....	....	....	....	....	10,5											B.	
Oct. 17	$\odot$ 1 L.....	34,2	47,6	1,4	14,9	29,2	42,4	56,2	13. 26. 15,13				15,62			13. 26. 58,44			B.	
	$\odot$ 2 L.....	44,8	58,6	12,0	25,6	39,8	53,2	7,0	13. 28. 25,86				26,35			13. 29. 9,18			B.	
	Arcturus.....	....	48,5	2,7	17,2	31,6	45,7	0,1	14. 8. 17,15				17,42	42,88					B.	
	(m) $\alpha$ Ophiuchi.....	45,7	59,3	13,0	26,9	40,9	54,6	8,3	17. 27. 26,96				27,24	43,00					B.	
Oct. 21	$\odot$ 2 L.....	43,9	57,6	11,2	24,9	38,9	52,2	6,1	13. 43. 24,97			-0,8	+10,6	25,60		1,27	13. 44. 13,06			B.
	Arcturus.....	29,8	43,6	58,2	12,4	27,0	41,1	55,3	14. 8. 12,48				12,84	47,48					B.	
Oct. 23	(n) $\odot$ 1 L.....	4,9	18,7	32,4	....	....	....	27,6	13. 48. 46,23				46,86		1,28	13. 49. 37,01			B.	
	$\odot$ 2 L.....	....	....	....	....	12,0	25,6	39,2	13. 50. 58,05				58,68			13. 51. 48,83			B.	
	Arcturus.....	26,8	41,2	55,5	9,8	24,2	38,5	52,8	14. 8. 9,83				10,19	50,14		14. 9. 0,36			B.	
	$\beta$ Aquarii.....	22,6	36,2	49,6	3,2	16,8	30,2	43,8	21. 23. 3,20				3,77	50,62		21. 23. 54,32			B.	
	$\alpha$ Aquarii.....	....	....	14,6	28,2	41,7	55,2	8,6	21. 57. 28,21				28,71	50,55		21. 58. 19,29			B.	
	$\alpha$ Pegasi.....	59,2	13,2	26,7	40,8	54,8	8,6	22,3	22. 56. 40,80				41,17	50,61		22. 57. 31,80			B.	
	Neptune.....	4,1	17,9	31,2	44,8	58,6	12,2	25,6	22. 59. 44,91				45,50			23. 0. 36,14			B.	
	(o) B. (w.) o. 904....	25,8	39,3	52,6	6,2	19,7	33,1	46,5	0. 51. 6,17				6,66			0. 51. 57,40			B.	
	B. (w.) o. 1026..	52,9	6,5	19,8	33,4	47,2	0,3	14,0	0. 57. 33,44				33,93			0. 58. 24,67			B.	
	(i) B. (w.) o. 1088..	0,1	....	26,6	39,6	53,8	7,1	20,6	1. 0. 40,13				40,57			1. 1. 31,32			B.	
	B. (w.) i. 65.....	56,2	10,0	23,7	37,3	51,1	4,7	18,5	1. 4. 37,36				37,74			1. 5. 28,49			B.	

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(a) Much clouded. (b) The observers were engaged at this time with Equatorial observations of Minor Planets, for which reason Polaris was taken at only two wires: these times were considered good, the star being steady. (c) Cloud: 2 L not seen. (d) Disappearing. (e) 'Another object north-preceding by 7<sup>s</sup>.' (f) Unsteady at times. (g) Scarcely visible for cloud. (h) Very faint from cloud. (i) Faint. (k) 'One of the same Mag. preceding.' (l) These were taken at the intervals - 4' and + 4' from the middle wire. (m) Faint from misty cloud. (n) Cloud. (o) 'The following star, the other being No. 903 of B. (w.)'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Oct. 23	(a) Egeria.....	50,7	4,4	17,7	30,6	44,8	57,8	....	1. 9. 31,07	+4,5	-0,8	+10,6	31,61		1,28	1. 10. 22,36			B.
	Egeria B.....	21,3	34,8	....	....	....	....	....	1. 9. 31,16				31,50			1. 10. 22,25			B.
	Polaris SP.....	....	....	4,5	58,5	....	32,8	....	13. 5. 56,94				4,47		1,22				B.
Oct. 24	⊙ 1 L.....	52,2	6,0	19,7	33,6	47,7	1,0	14,9	13. 52. 33,58				34,22			13. 53. 25,62			B.
	⊙ 2 L.....	4,2	18,0	31,6	45,4	59,6	13,2	27,0	13. 54. 45,57				46,21			13. 55. 37,61			B.
	Arcturus.....	25,6	40,0	54,2	8,5	23,0	37,0	51,6	14. 8. 8,56				3,92	51,41					B.
Oct. 26	⊙ 1 L.....	29,4	43,2	56,8	10,7	25,0	38,6	52,3	14. 0. 10,85				11,49		1,35	14. 1. 5,19			B.
	⊙ 2 L.....	42,0	55,6	9,4	23,2	37,3	50,8	4,8	14. 2. 23,30				23,94			14. 3. 17,64			B.
	(b) α Aquarii.....	44,2	57,7	11,0	24,4	38,2	51,3	4,7	21. 57. 24,50				25,00	54,22		21. 58. 19,15			B.
	α Pegasi.....	55,8	9,3	23,2	37,3	51,2	4,9	18,9	22. 56. 37,23				37,60	54,16		22. 57. 31,80			B.
	Neptune.....	49,7	3,3	17,0	30,4	44,3	57,6	11,3	22. 59. 30,51				31,09			23. 0. 25,29			B.
	β Ceti.....	....	55,3	9,3	23,6	37,7	51,7	6,4	0. 35. 23,57				24,27	54,26		0. 36. 18,56			B.
	(c) B. (w.) o. 904....	22,2	35,6	49,2	2,5	15,9	29,3	43,0	0. 51. 2,53				3,02			0. 51. 57,33			B.
	(d) B. (w.) o. 954....	54,0	7,3	20,9	34,7	48,2	....	14,6	0. 53. 34,43				34,92			0. 54. 29,23			B.
	Polaris SP.....	....	....	....	57,0	41,5	27,5	16,0	13. 5. 53,57				1,10		1,34				B.
	⊙ 1 L.....	18,8	32,6	46,4	0,3	14,4	28,0	41,8	14. 4. 0,32				0,96			14. 4. 56,07			B.
	⊙ 2 L.....	31,4	45,3	59,0	13,0	26,9	40,7	54,3	14. 6. 12,94				13,58			14. 7. 8,69			B.
	Arcturus.....	....	....	50,4	4,7	19,3	33,6	47,9	14. 8. 4,88				5,24	55,11					B.
Oct. 28	⊙ 1 L.....	9,2	23,0	36,7	50,8	4,8	18,2	32,1	14. 7. 50,68		-0,9		51,32		1,32	14. 8. 48,23			B.
	⊙ 2 L.....	21,9	35,8	49,4	3,3	17,4	31,2	45,0	14. 10. 3,43				4,07			14. 11. 0,98			B.
	β Ceti.....	38,2	52,6	6,7	20,8	35,2	49,3	3,7	0. 35. 20,92				21,62	56,91					B.
Oct. 30	⊙ 1 L.....	51,9	5,3	19,2	33,1	47,1	0,9	14,8	14. 15. 33,18			+8,1	33,67		1,59	14. 16. 33,00			B.
	⊙ 2 L.....	5,0	18,7	32,7	46,4	0,7	14,3	28,3	14. 17. 46,59				47,08			14. 18. 46,41			B.
	(e) B. (w.) XXI. 1078.	15,0	28,7	42,3	56,2	10,1	22,3	37,0	21. 44. 56,09				56,55			21. 45. 56,37			B.
	B. (w.) XXI. 1187.	58,4	12,2	26,0	40,3	53,7	6,8	20,2	21. 49. 39,65				40,10			21. 50. 39,93			B.
	(f) B. (w.) XXI. 1255.	11,0	25,0	38,8	52,6	6,6	20,0	34,1	21. 52. 52,58				53,06			21. 53. 52,89			B.
	α Aquarii.....	38,7	51,9	5,3	18,9	32,6	45,9	59,3	21. 57. 18,95				19,31	59,86					B.
	B.A.C. 7717.....	8,6	22,1	35,6	49,3	3,0	16,7	30,0	22. 0. 49,33				49,78			22. 1. 49,62			B.
	(g) Neptune.....	....	....	58,3	11,9	25,7	38,9	52,6	22. 59. 11,92				12,37			23. 0. 12,27			B.
	(h) α Andromedæ ...	....	22,3	38,3	53,3	8,7	23,6	39,3	23. 59. 53,29				53,57	59,93					B.
	⊙ 1 L.....	43,7	57,6	11,4	25,3	39,4	53,0	7,0	14. 19. 25,34				25,83		1,63	14. 20. 26,74			B.
Oct. 31	⊙ 2 L.....	57,2	11,0	25,0	38,8	53,0	6,7	20,7	14. 21. 38,92				39,41			14. 22. 40,33			B.
	(k) B. (w.) XXII. 792.	47,8	1,3	15,0	28,3	42,3	55,6	9,3	22. 36. 28,52				28,97			22. 37. 30,45			B.
	(l) α Pegasi.....	....	2,2	15,8	....	43,6	....	....	22. 56. 29,77				30,03			22. 57. 31,53			B.
	β Ceti.....	33,8	48,0	2,2	16,2	30,6	44,7	58,8	0. 35. 16,33				16,86	61,66		0. 36. 18,47			B.
	α Ceti.....	59,3	12,7	26,3	39,8	53,6	6,7	20,3	2. 53. 39,82				40,14	61,56		2. 54. 41,91			B.
	Polaris SP.....	19,5	10,5	54,0	44,5	35,0	23,0	10,5	13. 5. 45,29				48,91		1,65	13. 6. 51,39			C.
	(m) Spica.....	....	....	....	41,7	55,1	8,9	13,16	27,85				28,31	62,56		13. 17. 30,80			C.
	Arcturus.....	14,6	29,1	43,4	57,6	12,0	26,3	40,5	14. 7. 57,65				57,91	62,47		14. 9. 0,46			C.
	⊙ 1 L.....	36,5	50,4	4,3	18,0	32,3	46,0	0,0	14. 23. 18,22				18,71			14. 24. 21,28			C.
	⊙ 2 L.....	50,3	4,2	18,0	31,8	46,0	59,7	13,6	14. 25. 31,94				32,43			14. 26. 35,00			C.
Nov. 1	ε Bootis.....	48,3	3,5	18,6	33,6	49,2	4,2	19,6	14. 37. 33,85				34,13	62,60		14. 38. 36,72			C.
	α Coronæ.....	....	....	....	27,5	43,0	57,5	13,0	15. 27. 27,55				27,83	62,65		15. 28. 30,47			C.
	(o) β Ceti.....	30,5	44,6	58,7	13,0	27,4	41,6	55,7	0. 35. 13,07				13,60	64,91	1,61	0. 36. 18,51			C.
	(p) Polaris.....	26,5	14,0	1,0	....	....	....	....	1. 5. 49,32				46,95			1. 6. 51,90			C.
	Polaris SP.....	....	8,0	51,0	44,5	30,5	19,5	....	13. 5. 42,36				45,98		1,58	13. 6. 51,71			C.
Nov. 2	Arcturus.....	11,5	25,7	40,0	54,4	8,8	23,0	37,4	14. 7. 54,40				54,66	65,74		14. 9. 0,46			C.
	(q) ε Bootis.....	....	....	....	....	....	....	16,3	14. 37. 30,72				31,00	65,74					C.
Nov. 3	(r) ⊙ 1 L.....	24,6	38,6	52,4	6,4	20,6	34,4	48,5	14. 31. 6,50				7,01			14. 32. 12,84			C.
	⊙ 2 L.....	38,7	52,6	6,7	20,6	34,7	48,7	2,6	14. 33. 20,65				21,16			14. 34. 26,99			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

(a) The hour and minute were not recorded. (b) The sky had just become clear. (c) 'The south-following star.' See Oct. 23. (d) Faint at times. (e) The Moon near. (f) 'The following of two.' The other is No. 1253 of B. (w.) (g) 'Good: counting 29<sup>s</sup> in excess.' Correction applied accordingly. (h) Corrected by +9<sup>s</sup> for erroneous counting. (i) Very steady. (k) The evening had been cloudy. (l) Clouds. (m) Not seen before from being so faint. (n) Sharp definition. (o) Foggy. (p) 'Good.' Interruption by cloud. (q) 'Very good.' This transit was allowed to stand for clock-error. (r) 'Two large spots in the south-following quarter.'



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.				h.	m.	s.	
		s.	s.	s.	s.	s.	s.	s.		"	"	"				s.	s.	s.	
Nov. 3	$\alpha$ Coronæ.....	39,0	54,0	9,2	24,4	39,7	54,6	9,8	15. 27. 24,38	+4,5	-0,9	+8,1	24,66	65,82	1,58	15. 28. 30,55	C.		
	$\alpha$ Aquilæ.....	53,5	7,0	20,7	34,1	47,8	1,5	15,1	19. 42. 34,24				34,52	66,27		19. 43. 40,69	C.		
	$\beta$ Aquilæ.....	22,6	36,2	49,5	3,1	16,8	30,2	43,8	19. 47. 3,17				3,46	66,30		19. 48. 9,63	C.		
	$\beta$ Aquarii.....	6,7	20,5	33,6	47,4	1,2	14,6	28,1	21. 22. 47,45				47,87	66,37		21. 23. 54,15	C.		
	$\epsilon$ Pegasi.....	15,4	29,0	42,5	56,1	10,0	23,4	37,1	21. 35. 56,22				56,50			21. 37. 2,79	C.		
	B. (w.) XXI. 1167	9,2	22,7	36,1	50,0	3,7	17,3	31,0	21. 48. 50,00				50,45			21. 49. 56,76	C.		
	(a) B. (w.) XXI. 1256	10,2	23,7	37,2	50,6	4,5	17,8	31,5	21. 52. 50,78				51,21			21. 53. 57,52	C.		
	$\alpha$ Aquarii.....	32,2	45,6	58,8	12,3	26,0	39,4	52,7	21. 57. 12,43				12,79	66,33		21. 58. 19,11	C.		
	$\epsilon^2$ Aquarii.....	3,0	16,7	30,4	44,4	58,3	11,5	25,7	22. 1. 44,29				44,77			22. 2. 51,09	C.		
	$\alpha$ Pegasi.....	43,5	57,3	11,1	25,0	39,2	52,9	6,8	22. 56. 25,11				25,37	66,31		22. 57. 31,75	C.		
	Neptune.....	....	....	40,6	54,2	8,0	21,4	35,0	22. 58. 54,28				54,73			23. 0. 1,11	C.		
	(b) B. (w.) XXIII. 613	2,2	15,6	29,0	....	....	9,5	22,8	23. 28. 42,52				42,90			23. 29. 49,32	C.		
	$\lambda$ Piscium.....	51,2	4,7	18,1	31,6	45,3	58,6	12,0	23. 33. 31,64				31,98			23. 34. 38,40	C.		
	B.A.C. 8291.....	54,0	7,6	20,7	34,3	47,7	1,3	14,7	23. 42. 34,33				34,66			23. 43. 41,09	C.		
	(c) B. (w.) XXIII. 942	....	....	54,4	8,1	21,5	35,0	48,4	23. 45. 8,03				8,35			23. 46. 14,79	C.		
Nov. 4	(d) $\odot$ 1 L.....	....	....	47,7	1,7	....	29,8	43,9	14. 35. 1,83				2,33			14. 36. 9,74	C.		
	$\odot$ 2 L.....	34,3	48,3	2,4	16,3	30,4	44,2	58,3	14. 37. 16,32				16,82			14. 38. 24,23	C.		
Nov. 5	(e) Polaris SP.....	10,0	0,0	....	....	....	....	....	13. 5. 34,17	-0,4	+11,3		42,05		1,66	13. 6. 52,46	C.		
	Arcturus.....	6,7	21,0	35,2	49,6	4,1	18,2	32,5	14. 7. 49,62				50,04	70,40		14. 9. 0,52	C.		
Nov. 6	$\odot$ 1 L.....	12,8	27,0	41,0	54,7	9,3	23,2	37,2	14. 42. 55,08				55,77			14. 44. 6,29	C.		
	$\odot$ 2 L.....	27,9	41,7	55,7	10,0	24,1	38,0	52,2	14. 45. 9,94				10,68			14. 46. 21,20	C.		
	(f) $\alpha$ Coronæ.....	....	....	....	....	34,7	49,6	4,8	15. 27. 19,41				19,82	70,66		15. 28. 30,39	C.		
	(g) $\beta$ Aquarii.....	2,0	15,5	29,0	42,4	56,2	9,7	23,3	21. 22. 42,58				43,20	70,99		21. 23. 54,18	C.		
	(g) $\alpha$ Aquarii.....	27,3	40,6	53,9	7,4	21,1	34,5	48,0	21. 57. 7,55				8,10	70,98		21. 58. 19,12	C.		
	$\alpha$ Pegasi.....	....	....	6,2	20,1	34,3	48,0	1,7	22. 56. 20,18				20,60	71,05		22. 57. 31,69	C.		
	(h) Neptune.....	....	....	....	41,5	55,7	....	22,0	22. 58. 41,62				42,27			22. 59. 53,36	C.		
	(i) H. C. 45397 B....	21,3	34,4	25,2	38,6	....	....	....	23. 3. 31,08				31,57			23. 4. 42,67	C.		
	B.A.C. 8374.....	....	22,7	38,2	53,4	8,8	24,1	39,5	23. 57. 53,49				53,90			23. 59. 5,06	C.		
	$\alpha$ Andromedæ.....	....	....	26,6	41,8	57,2	12,4	27,6	23. 59. 41,85				42,26	71,19		0. 0. 53,42	C.		
	(k) B. (w.) o. 83.....	28,5	42,0	55,6	9,2	22,7	36,3	....	0. 4. 9,14				9,62			0. 5. 20,79	C.		
	$\beta$ Ceti.....	23,8	38,1	52,2	6,5	20,7	35,0	49,2	0. 35. 6,50				7,25	71,24		0. 36. 18,45	C.		
	Polaris SP.....	....	....	....	....	21,0	9,5	57,5	13. 5. 33,49				41,37		1,62	13. 6. 53,46	C.		
	(l) Spica.....	....	....	....	....	32,0	45,5	59,3	13. 16. 18,22				18,89	72,08			C.		
	(m) Arcturus.....	4,9	19,3	33,4	47,7	2,3	16,5	30,8	14. 7. 47,85				48,27	72,18			C.		
Nov. 7	(m) $\odot$ 1 L.....	10,5	....	....	52,7	7,0	21,0	....	14. 46. 52,78				53,52			14. 48. 5,72	C.		
	(e) $\odot$ 2 L.....	25,7	39,7	53,6	7,7	22,2	35,8	50,0	14. 49. 7,82				8,56			14. 50. 20,76	C.		
	(n) Polaris.....	....	12,0	54,0	40,5	38,0	23,5	11,0	1. 5. 46,02				39,76			1. 6. 52,66	C.		
Nov. 8	(o) B. (w.) I. 3.....	49,6	3,3	....	30,0	43,5	57,0	....	1. 0. 30,05			+10,5	30,52		1,33	1. 1. 44,81	C.		
	B. (w.) I. 43.....	....	....	....	43,2	56,7	10,2	23,7	1. 2. 43,23				43,69			1. 3. 57,98	C.		
	Polaris.....	....	8,5	52,0	38,0	34,0	....	....	1. 5. 41,99				36,97			1. 6. 51,26	C.		
	(p) B. (w.) I. 156.....	52,3	5,7	19,1	32,6	46,3	59,6	13,2	1. 9. 32,68				33,15			1. 10. 47,45	C.		
	(q) Polaris SP.....	7,5	56,0	38,0	33,5	19,5	5,0	53,0	13. 5. 30,36				36,92			13. 6. 51,88	C.		
	(e) Arcturus.....	....	16,6	30,7	45,0	59,6	13,7	28,0	14. 7. 45,12				45,50	74,98		14. 9. 0,51	C.		
Nov. 9	(r) $\odot$ 1 L.....	9,1	23,2	37,3	51,3	5,6	19,5	33,7	14. 54. 51,38				52,08			14. 56. 7,14	C.		
	$\odot$ 2 L.....	24,7	38,8	52,8	7,0	21,3	35,3	49,3	14. 57. 7,03				7,73			14. 58. 22,79	C.		
	$\beta$ Aquarii.....	57,5	11,0	24,6	38,0	51,7	5,3	18,7	21. 22. 38,12				38,70	75,45		21. 23. 54,12	C.		
	$\alpha$ Aquarii.....	22,7	36,2	49,5	3,0	16,7	30,0	43,5	21. 57. 3,08				3,59	75,46		21. 58. 19,04	C.		
	$\rho$ Aquarii.....	36,2	49,6	3,3	16,8	30,5	44,4	57,8	22. 11. 16,94				17,55			22. 12. 33,01	C.		
	(s) B. (w.) XXI. 346.....	....	4,4	17,7	31,7	45,6	59,2	....	22. 15. 31,73				32,38			22. 16. 47,85	C.		
	(t) B. (w.) XXII. 429.....	....	....	46,7	0,3	13,7	....	....	22. 19. 0,23				0,82			22. 20. 16,29	C.		
	(t) B. (w.) XXII. 434.....	....	....	....	....	22,0	35,5	49,3	22. 19. 8,48				9,07			22. 20. 24,54	C.		
	$\kappa$ Aquarii.....	17,4	30,7	44,2	57,6	11,5	24,8	38,4	22. 28. 57,80				58,37			22. 30. 13,85	C.		
	B.A.C. 7897.....	....	44,5	58,2	11,8	25,7	39,3	53,1	22. 31. 11,95				12,57			22. 32. 28,05	C.		

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

(a) Very faint from haze. (b) 'The north-following of two: so faint from haze as to be visible only by looking at another part of the field.' (c) Cloudy from this time. (d) Faint from cloud. (e) Cloudy. (f) Faint. (g) Foggy. (h) 'Not good:' much obscured by fog. (i) Too faint to be taken at the wires. (k) Faint to the last degree for observation at the wires. (l) Not seen before for day-light. (m) Great tremor. (n) Cloudy at times. (o) Extremely faint. (p) Soon after this it became cloudy and no clock-stars could be observed. (q) Tremor. (r) Serrated and unsteady. (s) 'Another of equal N.P.D. precedes about two intervals.' The noted times have been decreased  $1^m$ , and the preceding star is supposed to be No. 331 of B. (w.). (t) Bad atmospheric circumstances this night, the stars appearing to advance unequally, and sometimes becoming invisible.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"				h. m. s.	h. m. s.	h. m. s.	
Nov. 9	B.A.C. 7919.....	....	43,3	56,5	10,5	24,2	37,8	51,5	22. 34. 10,50	+4,5	-0,4	+10,5	11,11		1,33	22. 35. 26,59			C.
	$\tau^1$ Aquarii.....	....	....	....	....	....	11,4	25,5	22. 38. 43,68				44,35			22. 39. 59,84			C.
	$\tau^2$ Aquarii.....	....	....	....	37,7	51,8	5,5	19,5	22. 40. 37,79				38,46			22. 41. 53,95			C.
	B. (w.) xxii. 937.	13,8	27,5	40,7	54,4	8,0	21,2	....	22. 43. 54,34				54,88			22. 45. 10,37			C.
	$\alpha$ Pegasi.....	34,1	47,8	1,6	15,7	29,7	43,5	57,4	22. 56. 15,69				16,08	75,54		22. 57. 31,58			C.
	(a) Neptune.....	....	4,5	....	....	45,3	58,7	12,2	22. 58. 31,59				32,20			22. 59. 47,71			C.
	H. C. 46908.....	....	57,2	....	23,6	37,5	50,7	....	23. 47. 23,87				24,41			23. 48. 39,96			C.
	B. (w.) xxiii. 1059	....	....	....	....	....	55,9	9,5	23. 50. 29,08				29,60			23. 51. 45,15			C.
	(b) B.A.C. 8374.....	3,4	18,6	33,8	49,1	4,7	19,6	35,1	23. 58. 49,19				49,58			23. 59. 5,14			C.
	$\alpha$ Andromedæ...	51,6	7,0	22,0	37,4	52,9	8,0	23,3	23. 59. 37,46				37,85	75,57		0. 0. 53,41			C.
	$\gamma$ Pegasi.....	48,2	2,1	16,0	29,9	44,0	57,6	11,6	0. 4. 29,92				30,32			0. 5. 45,89			C.
	44 Piscium.....	1,4	14,8	28,2	41,7	55,8	8,8	22,2	0. 16. 41,84				42,33			0. 17. 57,91			C.
	(c) B. (w.) o. 365 ...	12,5	....	39,5	53,3	6,7	....	33,9	0. 20. 53,17				53,63			0. 22. 9,21			C.
	B. (w.) o. 425 ...	27,2	40,6	54,1	7,5	21,2	54,7	48,1	0. 24. 7,63				8,15			0. 25. 23,73			C.
	$\beta$ Ceti.....	19,7	33,7	47,8	2,3	16,6	30,6	45,0	0. 35. 2,24				2,94	75,54		0. 36. 18,53			C.
	Polaris.....	16,5	6,0	52,0	39,5	35,5	....	....	1. 5. 41,61				36,59			1. 6. 52,21			C.
	Arcturus.....	0,8	15,1	29,4	43,7	58,4	12,4	26,8	14. 7. 43,80				44,18	76,31	1,21				C.
Nov. 10	$\odot$ 1 L.....	9,8	24,0	38,0	52,1	6,5	20,4	34,5	14. 58. 52,18		0,0		52,89			15. 0. 9,25			C.
	$\odot$ 2 L.....	25,5	39,7	53,7	8,1	22,3	36,3	50,4	15. 1. 8,00				8,71			15. 2. 25,07			C.
Nov. 11	(d) $\odot$ 1 L.....	12,1	26,1	40,3	54,4	8,7	22,7	36,5	15. 3. 54,40				55,11		1,09	15. 4. 12,55			C.
	$\odot$ 2 L.....	23,0	42,3	56,3	10,4	24,6	38,5	53,0	15. 6. 10,44				11,15			15. 6. 28,60			C.
Nov. 14	(e) $\beta$ Ceti.....	15,6	30,0	44,2	58,2	12,5	26,6	41,0	0. 35. 58,30				59,01	19,44	0,43				C.
Nov. 15	$\beta$ Aquilæ.....	8,7	22,4	35,7	49,4	3,1	16,5	30,0	19. 47. 49,40				49,85	19,75	0,42	19. 48. 9,58			C.
	$\alpha$ Aquarii.....	18,2	31,7	45,1	58,6	12,3	25,5	39,0	21. 57. 58,63				59,16	19,81		21. 58. 18,93			C.
	$\alpha$ Pegasi.....	29,7	43,5	57,6	11,4	25,3	39,2	53,1	22. 57. 11,40				11,81	19,73		22. 57. 31,59			C.
	(f) Neptune.....	37,4	50,9	4,4	17,9	31,8	45,1	58,7	22. 59. 18,03				18,65			22. 59. 38,43			C.
	30 Piscium.....	29,9	43,6	57,0	10,7	24,4	37,6	51,2	23. 54. 10,62				11,22			23. 54. 31,02			C.
	B.A.C. 8374.....	59,1	14,3	29,6	44,8	0,2	15,5	30,7	23. 58. 44,89				45,31			23. 59. 5,11			C.
	$\alpha$ Andromedæ...	47,3	2,7	17,8	33,1	48,6	3,8	19,1	0. 0. 33,20				33,62	19,75		0. 0. 53,42			C.
	B. (w.) o. 81.....	13,0	26,5	39,9	53,4	7,1	20,3	33,7	0. 4. 53,41				53,96			0. 5. 13,76			C.
	(g) B. (w.) o. 140....	....	....	18,0	31,3	45,2	58,1	11,5	0. 8. 31,38				31,91			0. 8. 51,71			C.
	$\alpha$ Arietis.....	56,2	10,8	25,3	39,9	54,6	9,2	23,8	1. 58. 39,98				40,39	19,82		1. 59. 0,23			C.
	$\gamma$ Ceti.....	46,6	0,0	13,4	27,1	40,5	54,0	7,4	2. 35. 27,00				27,49			2. 35. 47,34			C.
	$\pi$ Arietis.....	10,0	23,9	38,0	52,0	6,3	20,1	34,1	2. 40. 52,06				52,47			2. 41. 12,32			C.
	$\sigma$ Arietis.....	....	41,5	55,3	9,2	23,4	37,1	....	2. 43. 9,31				9,73			2. 43. 29,58			C.
	$\rho^1$ Arietis.....	45,3	59,5	13,6	27,5	41,7	55,7	9,9	2. 46. 27,60				28,01			2. 46. 47,86			C.
	$\rho^3$ Arietis.....	....	....	....	....	9,3	23,2	37,2	2. 47. 55,00				55,41			2. 48. 15,26			C.
	$\alpha$ Ceti.....	41,4	55,0	8,4	22,0	35,4	48,8	2,4	2. 54. 21,91				22,38	19,86		2. 54. 42,23			C.
	B. (w.) ii. 1082..	2,6	16,4	30,0	43,7	57,7	11,3	25,1	3. 0. 43,83				44,25			3. 1. 4,10			C.
	(h) H. C. 5956.....	37,7	52,0	6,1	20,2	34,7	48,7	3,0	3. 5. 20,34				20,75			3. 5. 40,61			C.
	B. (w.) iii. 172..	15,6	29,2	42,9	56,8	10,9	24,3	38,1	3. 9. 56,83				57,25			3. 10. 17,11			C.
	H. C. 6230.....	....	....	22,8	36,8	51,0	....	....	3. 14. 36,87				37,28			3. 14. 57,14			C.
	H. C. 6237.....	....	....	....	....	3,8	17,7	31,5	3. 14. 49,66				50,07			3. 15. 9,93			C.
	H. C. 6350.....	12,8	27,6	42,1	56,9	11,6	26,4	41,1	3. 18. 56,93				57,34			3. 19. 17,20			C.
	f Tauri.....	....	4,6	18,2	31,9	45,8	59,7	13,4	3. 22. 32,05				32,47			3. 22. 52,33			C.
	(i) $\eta$ Tauri.....	....	1,6	16,0	....	46,9	1,2	16,0	3. 38. 31,52				31,93			3. 38. 51,80			C.
Nov. 17	Arcturus.....	55,7	10,0	24,4	38,7	53,2	7,4	21,7	14. 8. 38,73		+0,2	+11,7	39,20	21,41	0,78				C.
Nov. 21	$\delta^1$ Tauri.....	....	....	....	....	23,4	37,4	51,5	4. 14. 9,24				9,71		0,49	4. 14. 34,70			C.
	$\delta^2$ Tauri.....	....	....	....	19,1	33,3	47,2	1,3	4. 15. 19,11				19,58			4. 15. 44,57			C.
	$\theta^1$ Tauri.....	10,4	24,4	38,3	52,3	....	....	....	4. 19. 52,33				52,79			4. 20. 17,78			C.
	$\theta^2$ Tauri.....	....	....	....	....	12,0	25,7	39,7	4. 19. 57,84				58,30			4. 20. 23,29			C.
	Aldebaran.....	28,8	42,5	56,7	10,8	25,0	38,8	52,8	4. 27. 10,77				11,24	24,99					C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

After the observation of the Sun on Nov. 10, Hardy was put forward 1<sup>m</sup>.

- (a) Difficult to observe, being faint, and often disappearing. (b) The times have been decreased by 1<sup>m</sup>: see Nov. 6. (c) Extremely faint.  
 (d) 'Several spots have broken out near the Eastern Limb, one of them intensely black in the centre.' (e) Bad illumination of the field. (f) 'Advanced unequally.'  
 (g) Very faint at times. 'Another north-preceding.' (h) 'Not double.' (i) Cloudy.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.	Observer.				
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.									
		s.	s.	s.	s.	s.	s.	s.		"	"	"									
									h.	m.	s.						h.	m.	s.		
Nov.22	(a) $\alpha$ Pegasi .....	....	38,0	51,8	5,6	19,8	33,5	47,6	22.	57.	5,78	+4,5	+0,2	+11,7	6,25	25,21	0,51				C.
	Neptune .....	....	....	....	7,0	20,9	34,4	48,3	22.	59.	7,29				7,99			22.	59.	33,25	C.
	Neptune B. ....	....	....	1,8	15,1	....	....	....	22.	59.	7,30				8,03			22.	59.	33,29	C.
	(b) Polaris .....	....	....	36,5	21,5	21,0	....	....	1.	6.	26,35				20,74			1.	6.	46,04	C.
	(b) Polaris M. ....	7,0	53,0	38,0	21,5	8,0	52,0	36,0	1.	6.	24,90				19,29			1.	6.	44,59	C.
	(b)(c) Polaris M. ....	23,0	....	....	....	....	....	21,5	1.	6.	24,90							1.	6.	44,59	C.
	26 Arietis .....	22,2	36,4	50,7	4,9	19,6	33,6	47,8	2.	22.	5,03				5,50			2.	22.	30,83	C.
	B.A.C. 782 .....	22,0	36,4	50,5	4,7	19,0	33,0	47,2	2.	25.	4,69				5,16			2.	25.	30,49	C.
	(d) $\alpha$ Ceti .....	35,9	49,5	2,8	16,4	29,9	43,3	56,8	2.	54.	16,37				16,91	25,38					C.
	Arcturus .....	51,7	6,0	20,3	34,6	49,1	3,3	17,6	14.	8.	34,66				35,13	25,58	0,66	14.	9.	0,76	C.
Nov.23	B. (w.) I. 973 ....	39,2	52,9	6,7	20,7	34,6	48,0	1,9	1.	54.	20,57				21,05			1.	54.	47,00	C.
	$\alpha$ Arietis .....	50,2	4,7	19,3	33,8	48,6	3,0	17,6	1.	58.	33,88				34,35	25,86		1.	59.	0,31	C.
	B. (w.) II. 10. ....	13,5	27,4	41,0	54,8	....	22,1	35,8	2.	1.	54,74				55,23			2.	2.	21,19	C.
	B. (w.) II. 79 ....	17,4	31,1	44,9	58,4	12,5	26,1	40,0	2.	5.	58,63				59,11			2.	6.	25,07	C.
	$\theta$ Arietis .....	54,8	9,0	23,2	37,4	51,8	6,0	20,1	2.	9.	37,47				37,94			2.	10.	3,90	C.
	$\xi$ Arietis .....	55,5	9,1	22,7	36,4	50,4	3,8	17,6	2.	16.	36,50				36,99			2.	17.	2,95	C.
	$\xi^2$ Ceti .....	20,0	33,7	47,0	0,7	14,5	27,9	41,6	2.	20.	0,77				1,27			2.	20.	27,23	C.
	(e) Aldebaran .....	....	....	....	9,6	23,5	37,7	51,7	4.	27.	9,61				10,08	26,18		4.	27.	36,10	C.
	$\alpha$ Pegasi .....	22,6	36,7	50,5	4,3	18,3	32,2	46,1	22.	57.	4,39				4,86	26,58	0,68				C.
	(f) Neptune .....	....	....	52,1	5,5	19,3	32,7	46,4	22.	59.	5,64				6,34			22.	59.	32,91	C.
Nov.24	(g) H. C. 45397 ....	34,9	48,5	2,0	15,4	29,1	42,1	55,8	23.	5.	15,40				16,01			23.	4.	42,58	C.
	(h) $\alpha$ Andromedæ ..	40,5	55,7	....	....	....	....	....	0.	0.	26,27				26,74	26,53					C.
	(i) $\theta$ Arietis .....	....	7,6	21,7	36,0	....	4,7	18,8	2.	9.	36,10			+1,0	36,62		0,70	2.	10.	3,94	C.
	(i) H. C. 4363 .....	....	56,7	10,4	24,0	37,7	51,1	....	2.	13.	23,99				24,54			2.	13.	51,87	C.
Nov.25	(k) B. (w.) II. 405 ..	....	....	....	....	....	19,7	33,3	2.	23.	52,13				52,65			2.	24.	19,98	C.
	$\gamma$ Ceti .....	39,2	52,7	6,2	19,6	33,4	46,5	59,9	2.	35.	19,65				20,24			2.	35.	47,58	C.
	$\pi$ Arietis .....	....	....	30,4	44,4	58,7	12,8	....	2.	40.	44,56				45,08			2.	41.	12,42	C.
	$\pi$ Arietis B. ....	31,5	45,6	41,0	54,9	....	....	....	2.	40.	44,50				44,95			2.	41.	12,29	C.
	$\alpha$ Ceti .....	33,8	47,4	0,7	14,2	28,0	41,2	54,6	2.	54.	14,27				14,85	27,45					C.
	B. (w.) II. 1033 ..	17,1	30,9	44,6	58,5	12,6	26,1	40,0	2.	57.	58,55				59,07			2.	58.	26,42	C.
	(l)(m) B. (w.) II. 1067.	....	....	33,0	46,8	1,0	....	....	2.	59.	46,93				47,45			3.	0.	14,80	C.
	$\zeta$ Arietis .....	23,3	37,9	52,0	6,3	21,0	35,2	49,6	3.	6.	6,47				6,98			3.	6.	34,33	C.
	Aldebaran .....	26,5	40,4	54,3	8,4	22,7	36,5	50,5	4.	27.	8,48				9,00	27,29					C.
	Nov.26	(n) Polaris SP. ....	....	....	....	....	55,0	47,0	35,0	13.	6.	8,51				14,22		0,68	13.	6.	42,63
(n)(o) Spica .....		21,3	34,7	48,6	2,3	15,9	29,7	43,1	13.	17.	2,23				2,97	28,46		13.	17.	31,39	C.
Arcturus .....		48,9	3,2	17,5	31,7	46,2	0,4	14,8	14.	8.	31,81				32,32	28,46		14.	9.	0,76	C.
$\epsilon$ Bootis .....		22,4	37,8	52,8	8,0	23,4	38,4	53,6	14.	38.	8,06				8,58	28,46		14.	38.	37,04	C.
Nov.27	(l)(p) $\odot$ 1 L. ....	41,0	55,4	9,7	24,1	....	53,2	....	16.	10.	24,28				25,12			16.	10.	53,62	C.
	$\odot$ 2 L. ....	0,6	15,1	29,4	....	....	....	....	16.	12.	43,97				44,81			16.	13.	13,31	C.
	(q) B. (w.) o. 420 ..	....	19,2	32,6	45,8	59,7	13,0	....	0.	24.	46,07				46,66			0.	25.	15,39	C.
	B. (w.) o. 527. ....	12,3	25,6	39,1	52,7	6,3	19,7	33,1	0.	30.	52,68				53,30			0.	31.	22,04	C.
	$\beta$ Ceti .....	6,2	20,2	34,6	48,7	3,2	17,1	31,5	0.	35.	48,79				49,60	28,75		0.	36.	18,34	C.
	$\delta$ Piscium .....	59,5	13,0	26,6	40,0	53,7	7,1	20,7	0.	40.	40,08				40,63			0.	41.	9,37	C.
	(r) B. (w.) I. 482 ..	49,1	....	15,9	29,0	43,2	....	10,3	1.	27.	29,46				30,02			1.	27.	58,78	C.
	$\nu$ Piscium .....	43,4	56,8	10,3	23,7	37,6	50,8	4,4	1.	33.	23,86				24,42			1.	33.	53,18	C.
	$\sigma$ Piscium .....	34,2	47,8	1,3	14,8	28,7	42,1	55,7	1.	37.	14,94				15,48			1.	37.	44,25	C.
	B. (w.) I. 732 .....	....	54,0	7,6	21,2	35,4	49,1	3,4	1.	40.	21,55				22,08			1.	40.	50,85	C.
	B. (w.) I. 787 ....	57,2	10,7	24,2	37,7	51,6	4,7	18,6	1.	43.	37,82				38,37			1.	44.	7,14	C.
	B. (w.) I. 858 ....	45,0	58,8	12,1	26,0	40,0	53,6	7,4	1.	47.	26,13				26,65			1.	47.	55,42	C.
	B. (w.) I. 909 ....	19,8	33,2	46,8	0,2	13,8	27,3	41,0	1.	51.	0,30				0,85			1.	51.	29,62	C.
	B. (w.) I. 965 ....	....	....	....	43,6	57,5	10,6	24,4	1.	53.	43,69				44,24			1.	54.	13,01	C.
	$\alpha$ Arietis .....	47,1	1,8	16,4	31,0	45,7	0,0	14,7	1.	58.	30,95				31,47	28,74		1.	59.	0,25	C.
	Nov.29	$\alpha$ Ceti .....	31,3	44,7	58,2	11,7	25,5	38,8	52,1	2.	54.	11,75				12,33	29,98	0,63			

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40°,308, -26°,907, -13°,520, -0°,067, +13°,579, +26°,870, +40°,353.

(a) Scattered image. (b) Cloud, and tremor at times. (c) At the intervals -4" and +4" from the middle wire. (d) After this it became quite cloudy. (e) Cloudy. (f) Bad image, and very faint from cloud. (g) Extremely faint. The noted times have been diminished by 1<sup>m</sup>: see Nov. 6. (h) Interruption by cloud. A weight of two-sevenths has been given to the clock-error by this observation. (i) Very bad definition and irregular motion of stars this evening. (k) 'Very faint; only one star seen.' (l) Very faint from cloud. (m) 'Several near.' (n) Great tremor. (o) Therm. in Transit Room at 32°. (p) Without a dark glass. (q) 'The only star near in time.' The observer inferred from the setting circle that the N.P.D. was 83°.19', that from B. (w.) being 83°.39'. (r) Extremely faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		"	"	"		s.	s.	s.	h.	m.	s.
Nov. 29	B. (w.) II. 1067.	3,2	17,0	30,7	44,5	58,5	12,0	25,9	2. 59. 44,54	+4,5	+1,0	+11,7	45,07		0,63	3. 0. 15,10			C.
	δ Arietis	....	....	35,8	50,0	4,4	18,6	32,8	3. 2. 50,09				50,60			3. 3. 20,63			C.
	Aldebaran	....	37,6	51,7	5,6	19,8	33,7	47,8	4. 27. 5,70				6,22	30,12					C.
	Arcturus	47,2	1,4	15,6	29,9	44,6	58,7	12,8	14. 8. 30,03				30,54	30,31	0,67	14. 9. 0,87			C.
Nov. 30	⊙ 1 L.	31,0	45,5	0,1	14,7	29,3	43,7	58,3	16. 23. 14,66				15,50			16. 23. 45,89			C.
	⊙ 2 L.	51,4	5,7	20,3	34,8	49,5	3,9	18,5	16. 25. 34,87				35,71			16. 26. 6,10			C.
	α Lyrae	36,8	54,0	11,1	28,5	45,8	3,0	20,3	18. 31. 28,50				29,01			18. 31. 59,46			C.
	β Lyrae	22,3	38,1	54,4	10,4	26,7	42,7	58,8	18. 44. 10,48				10,99	30,39		18. 44. 41,44			C.
	ζ Aquilæ	30,1	43,8	57,7	11,6	25,6	39,4	53,3	18. 58. 11,64				12,16	30,45		18. 58. 42,62			C.
	γ Aquilæ	7,4	21,6	35,2	48,8	2,7	16,4	29,9	19. 38. 48,86				49,38	30,55		19. 39. 19,86			C.
	(a) α Aquilæ	28,7	42,3	55,8	9,4	23,2	36,6	50,3	19. 43. 9,48				10,02	30,48		19. 43. 40,50			C.
	β Aquilæ	....	11,4	24,8	38,3	52,0	5,4	19,0	19. 47. 38,39				38,94	30,52		19. 48. 9,42			C.
	Arcturus	46,6	0,8	15,0	29,4	43,7	57,9	12,3	14. 8. 29,39				29,90	30,97	0,77	14. 9. 0,90			C.
	α Coronæ	13,8	29,0	44,0	59,2	14,5	29,4	44,6	15. 27. 59,22				59,74	30,97		15. 28. 30,79			C.
Dec. 1	⊙ 1 L.	49,2	3,7	18,1	32,7	47,4	1,7	16,4	16. 27. 32,74				33,58			16. 28. 4,66			C.
	⊙ 2 L.	9,4	24,2	38,7	53,2	7,7	22,0	36,7	16. 29. 53,13				53,97			16. 30. 25,05			C.
	(b) α Ceti	29,8	43,3	56,6	10,2	23,8	37,1	50,7	2. 54. 10,21				10,79	31,52		2. 54. 42,20			C.
Dec. 3	Arcturus	43,6	57,8	12,0	26,5	41,0	55,1	9,4	14. 8. 26,49		+0,7	+10,0	26,92	33,98	1,28				C.
	α Coronæ	11,0	26,0	41,0	56,2	11,6	26,4	41,6	15. 27. 56,26				56,71	34,05					C.
Dec. 4	⊙ 1 L.	45,8	0,5	15,1	29,5	44,4	58,7	13,4	16. 40. 29,63				30,35		1,38	16. 41. 4,47			C.
	⊙ 2 L.	6,6	21,3	36,0	50,5	5,2	19,5	34,2	16. 42. 50,47				51,19			16. 43. 25,31			C.
Dec. 5	(c) α Andromedæ	31,0	46,4	1,6	16,6	32,2	47,2	2,5	0. 0. 16,79				17,24	35,90		0. 0. 53,24			C.
	(d) β Ceti	59,0	13,1	27,4	41,2	55,9	10,0	24,3	0. 35. 41,55				42,24	36,04		0. 36. 18,28			C.
	Polaris	40,0	29,0	16,5	2,5	....	....	....	1. 6. 5,90				3,96						C.
	(e) Polaris M.	48,5	33,3	18,0	2,5	47,5	32,0	17,5	1. 6. 5,44				3,50						C.
	ε Piscium	36,7	50,1	3,8	17,1	31,0	44,2	57,9	1. 0. 17,26				17,72			1. 0. 53,78			C.
	B. (w.) II. 885.	30,0	43,8	57,6	11,4	25,5	39,0	53,0	2. 50. 11,47				11,91			2. 50. 48,07			C.
	α Ceti	25,2	38,7	52,1	5,7	19,2	32,5	46,0	2. 54. 5,63				6,11	36,21		2. 54. 42,28			C.
	H. C. 5701	18,6	32,5	46,6	0,6	15,0	29,0	43,1	2. 57. 0,77				1,21			2. 57. 37,38			C.
	ε Tauri	50,1	4,2	18,4	32,7	47,2	1,1	15,4	4. 19. 32,73				33,16			4. 20. 9,41			C.
	Aldebaran	17,6	31,6	45,7	59,6	13,8	27,8	41,8	4. 26. 59,70				0,13	36,29		4. 27. 36,39			C.
	σ <sup>1</sup> Tauri	34,3	48,1	2,1	16,0	....	....	....	4. 30. 16,09				16,55			4. 30. 52,81			C.
	σ <sup>2</sup> Tauri	....	....	....	....	36,7	50,5	4,4	4. 30. 22,56				22,98			4. 30. 59,24			C.
Dec. 6	(f) ⊙ 1 L.	....	....	....	9,6	24,4	38,7	53,5	16. 49. 9,63				10,35		1,36	16. 49. 47,27			C.
	⊙ 2 L.	47,2	....	....	....	....	....	....	16. 51. 30,97				31,69			16. 52. 8,62			C.
	β Ceti	....	11,8	25,9	40,1	54,6	8,7	22,8	0. 35. 40,22				40,91	37,36					C.
	Arcturus	39,7	53,5	8,1	22,3	36,9	51,0	5,5	14. 8. 22,43				22,86	38,16	1,26	14. 9. 1,01			C.
	α Coronæ	6,8	21,9	37,0	52,2	7,6	22,4	37,8	15. 27. 52,24				52,69	38,11		15. 28. 30,91			C.
Dec. 7	⊙ 1 L.	46,8	1,3	15,9	30,4	45,2	59,7	14,4	16. 53. 30,52				31,24			16. 54. 9,54			C.
	⊙ 2 L.	8,2	22,7	37,4	52,0	6,7	21,3	36,0	16. 55. 52,04				52,76			16. 56. 31,06			C.
	γ Aquilæ	0,0	13,7	27,3	41,0	54,8	8,5	22,0	19. 38. 41,04				41,47	38,42		19. 39. 19,91			C.
	α Aquilæ	20,7	34,4	47,5	1,4	15,3	28,8	43,3	19. 43. 1,63				2,08	38,38		19. 43. 40,53			C.
	α Pegasi	10,4	24,5	38,2	52,1	6,2	20,0	33,9	22. 56. 52,18				52,61	38,67		22. 57. 31,23			C.
	(g) Neptune	23,2	36,5	50,2	3,9	17,7	31,1	45,0	22. 59. 3,94				4,56			22. 59. 43,18			C.
	α Andromedæ	28,2	43,4	58,7	13,9	29,4	44,6	59,8	0. 0. 14,00				14,45	38,67		0. 0. 53,12			C.
	B. (w.) o. 179	21,6	35,1	48,6	2,1	15,7	29,0	42,5	0. 10. 2,08				2,57			0. 10. 41,25			C.
	(h) B. (w.) o. 217	....	....	....	15,4	28,9	42,4	....	0. 12. 15,40				15,87			0. 12. 54,55			C.
	(i) B. (w.) o. 273	51,7	....	18,9	....	45,7	59,2	12,5	0. 15. 32,20				32,69			0. 16. 11,37			C.
	β Ceti	56,2	10,4	24,4	38,7	53,2	7,2	21,4	0. 35. 38,79				39,48	38,78		0. 36. 13,18			C.
	Polaris M.	....	29,0	17,5	59,0	44,5	28,0	....	1. 6. 2,28				0,34						C.
	Polaris	....	....	....	59,0	58,5	39,0	31,0	1. 6. 3,49				1,55						C.
	B.A.C. 397	34,2	47,8	1,1	14,5	28,2	41,4	55,1	1. 11. 14,61				15,10			1. 11. 53,83			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) Great tremor. (b) Faint from cloud. (c) Images bad and unsteady this evening. (d) Tremulous disk. (e) 'Very good: the star steady.'  
 (f) 'Cloudy: not good.' (g) Observed doubtfully, being very faint from fog. (h) 'Faint: no other near.' (i) Extremely faint.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Dec. 7	B. (w.) 1. 328....	26,9	40,4	53,7	7,4	21,1	34,5	48,0	1. 19. 7,43	+4,5	+0,7	+10,0	7,89		1,26	1. 19. 46,63			C.
	(a) B.A.C. 464.....					16,4	29,9	43,6	1. 25. 2,80				3,26			1. 25. 42,01			C.
	B.A.C. 471.....	56,4	9,8	23,5	37,0	50,8	4,3	17,8	1. 26. 37,09				37,54			1. 27. 16,29			C.
	(b) $\alpha$ Piscium.....	24,4	38,0	51,5	5,0		32,2		1. 37. 5,12				5,57			1. 37. 44,33			C.
Dec. 8	$\alpha$ Arietis.....	36,2	50,8	5,4	19,8	34,6	49,1	3,7	1. 58. 19,95				20,39	39,78	1,25				C.
	$\xi^1$ Ceti.....	58,0	11,4	25,0	38,7	52,4	5,8	19,5	2. 4. 38,69				39,14			2. 5. 19,04			C.
	$\theta$ Arietis.....	40,8	55,2	9,3	23,4	38,0	52,1	6,3	2. 9. 23,58				24,02			2. 10. 3,92			C.
	B. (w.) II. 196...	31,5			12,4	26,1		52,9	2. 12. 12,32				12,78			2. 12. 52,69			C.
	B. (w.) IV. 103..	48,0	2,0	15,6	29,7				4. 5. 29,67				30,11			4. 6. 10,11			C.
	$\omega^2$ Tauri.....		37,1	51,6	5,8	20,3	34,5	48,9	4. 8. 5,87				6,30			4. 8. 46,31			C.
	$\gamma$ Tauri.....	10,7	24,7	38,5	52,4	6,6	20,4	34,4	4. 10. 52,53				52,96			4. 11. 32,97			C.
	$\delta^1$ Tauri.....	12,0	26,1	40,0	54,2	8,7	22,6	36,6	4. 13. 54,31				54,75			4. 14. 34,76			C.
	$\delta^2$ Tauri.....				4,0	18,5	32,2	46,5	4. 15. 4,18				4,61			4. 15. 44,62			C.
	$\nu^2$ Tauri.....		28,0	42,6	57,1	11,9	26,4	40,9	4. 17. 57,20				57,64			4. 18. 37,65			C.
	$\theta^1$ Tauri.....					51,5	5,3	19,5	4. 19. 37,46				37,88			4. 20. 17,90			C.
	(c) H. C. 8560.....		55,3		24,3	39,6	54,4		4. 24. 24,66				25,10			4. 25. 5,12			C.
	Aldebaran.....	13,9	27,9	41,8	55,7	10,0	24,0	37,9	4. 26. 55,89				56,32	40,13					C.
	(d) $\sigma^1$ Tauri.....	30,5	44,4	58,4	12,2				4. 30. 12,34				12,77			4. 30. 52,79			C.
	(d) $\sigma^2$ Tauri.....					32,6	46,7	0,8	4. 30. 18,73				19,15			4. 30. 59,17			C.
Dec. 9	(e) $\odot$ 1 L.....	30,3	44,9	59,6	14,1	29,0	43,5	58,2	17. 2. 14,23				14,95		1,23	17. 2. 55,70			C.
	$\odot$ 2 L.....	51,9	6,6	21,2	35,8	50,5	5,0	19,9	17. 4. 35,84				36,56			17. 5. 17,32			C.
	$\alpha$ Lyrae.....	26,6	43,6	0,9	18,0	35,6	52,4	9,7	18. 31. 18,12				18,59			18. 31. 59,42			C.
	$\beta$ Lyrae.....	11,9	27,9	43,9	0,0	16,3	32,3	48,5	18. 44. 0,11				0,56	40,78		18. 44. 41,40			C.
	$\zeta$ Aquilæ.....	19,7	33,7	47,4	1,3	15,2	29,0	42,8	18. 58. 1,30				1,73	40,85		18. 58. 42,58			C.
	$\gamma$ Aquilæ.....	57,5	11,2	24,9	38,6	52,4	5,7	19,7	19. 38. 38,57				39,01	40,87		19. 39. 19,90			C.
	$\alpha$ Aquilæ.....	18,4	31,9	45,5	59,0	12,8	26,3	3,7	19. 42. 59,09				59,54	40,91		19. 43. 40,43			C.
	(f) $\alpha$ Ceti.....	20,1	33,7	47,0	0,5	14,2	27,6	41,2	2. 54. 0,61				1,10	41,22		2. 54. 42,36			C.
	B.A.C. 1478.....	48,8	2,9	17,0	31,2	45,7	59,8	14,0	4. 39. 31,34				31,78			4. 40. 13,13			C.
	$\iota$ Tauri.....	29,6	43,7	57,8	12,0	26,5	40,6	54,7	4. 42. 12,13				12,56			4. 42. 53,91			C.
	* N.P.D. 64°. 8'.	55,4	10,3	25,4	40,1	55,5	10,2	25,2	4. 48. 40,30				40,76			4. 49. 22,12			C.
	H. C. 9385.....		33,8	48,9	3,9				4. 52. 3,95				4,41			4. 52. 45,77			C.
	H. C. 9387.....					21,1	36,0	51,1	4. 52. 6,00				6,46			4. 52. 47,82			C.
	$\iota$ Tauri.....	49,1	3,6	17,6	32,0	46,7	0,9	15,2	4. 58. 32,15				32,59			4. 59. 13,96			C.
	H. C. 9658.....				55,6	10,2	24,4	38,8	4. 59. 55,73				56,17			5. 0. 37,54			C.
	Rigel.....	12,0	25,4	39,0	52,6	6,4	19,7	33,3	5. 6. 52,63				53,25	41,49		5. 7. 34,62			C.
	22 Aurigæ.....		59,7	15,1	30,5	46,0	1,2		5. 13. 30,51				30,96			5. 14. 12,34			C.
	$\beta$ Tauri.....	40,2	55,6	10,6	26,2	41,7	56,7	12,0	5. 16. 26,15				26,60	41,34		5. 17. 7,98			C.
Dec. 10	(g) $\epsilon$ Bootis.....	8,6	23,7	39,0	54,0	9,5	24,6	39,7	14. 37. 54,15				54,61	42,75	0,84				C.
	$\alpha$ Coronæ.....	2,3	17,5	32,4	47,7	2,9	17,9	33,0	15. 27. 47,67				48,12	42,76					C.
Dec. 11	(h) $\odot$ 1 L.....	15,6	30,5	45,2			29,2	43,9	17. 10. 59,83				0,55			17. 11. 43,38			C.
	$\odot$ 2 L.....	37,7	52,3		21,5		51,0	5,8	17. 13. 21,67				22,39			17. 14. 5,22			C.
	$\alpha$ Coronæ.....	1,6	16,6	31,7	46,9	2,3	17,4	32,4	15. 27. 46,99				47,44	43,46	0,83				C.
Dec. 12	$\odot$ 1 L.....	39,6	54,2	8,7	23,4	38,5	53,1	7,7	17. 15. 23,60				24,32			17. 16. 7,86			C.
	(i) $\odot$ 2 L.....	1,7	16,3	31,0	45,5	0,4	15,2	29,6	17. 17. 45,67				46,39			17. 18. 29,93			C.
	(k) $\zeta$ Aquilæ.....		30,7		58,6	12,6	26,2	40,0	18. 57. 58,54				58,97	43,61					C.
Dec. 14	(l) $\alpha$ Arietis.....				13,6	28,4	42,8	57,6	1. 58. 13,71			+9,8	14,15	45,99	1,43				C.
	$\alpha$ Ceti.....	15,3	28,7	42,3	55,7	9,6	22,7	36,2	2. 53. 55,79				56,27	46,04					C.
	$\alpha$ Coronæ.....	58,4	13,3	28,5	43,6	59,0	14,0	29,2	15. 27. 43,71				44,16	46,81	1,59				C.
Dec. 15	(m) $\odot$ 1 L.....	51,7	6,4	21,4	36,1	50,9	5,6	20,1	17. 28. 36,03				36,74			17. 29. 23,72			C.
	$\odot$ 2 L.....	14,4	29,2	43,6	58,3	13,4	27,8	42,3	17. 30. 58,43				59,14			17. 31. 46,12			C.
	$\alpha$ Aquilæ.....	12,0	25,6	39,1	52,7	6,7	20,0	33,7	19. 42. 52,83				53,27	47,17					C.
	(n) $\alpha$ Coronæ.....	56,9	11,9	27,0	42,1	57,4	12,3	27,6	15. 27. 42,17			+1,0	42,63	48,36	1,62	15. 28. 31,14			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires,  $-40^s,308$ ,  $-26^s,907$ ,  $-13^s,520$ ,  $-0^s,067$ ,  $+13^s,579$ ,  $+26^s,870$ ,  $+40^s,353$ .

- (a) The recorded time was 1<sup>m</sup> greater, which would not allow of the next observation. (b) Faint from cloud. After this the sky was quite clouded.  
 (c) Extremely faint. (d) The recorded times were 1<sup>m</sup> less. (e) Serrated and tremulous, especially 1 L. (f) The sky had just become clear.  
 (g) Great tremor. (h) Very faint from cloud: observed with a dark glass held in the hand. (i) A very bright spot close to this Limb. (k) Faint and tremulous. (l) The sky had just become clear, but was soon after clouded. (m) Unsteady and serrated. (n) Cloud and tremor.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Azimuth Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.		s.	s.	s.	h.	m.	s.
Dec. 16	⊙ 1 L. ....	16,5	31,1	45,8	0,5	15,4	29,8	44,5	17.33.0,51	+4,5	+1,0	+9,8	1,22		1,62	17.33.49,87			C.
	⊙ 2 L. ....	38,9	53,5	8,2	22,6	37,7	52,2	7,0	17.35.22,87				23,58			17.36.12,23			C.
	γ Aquilæ. ....			17,0	30,6	44,3	57,9	11,7	19.38.30,64				31,08	48,78		19.39.19,87			C.
	α Aquilæ. ....	10,4	24,0	37,4	51,2	4,8	18,4	32,0	19.42.51,17				51,62	48,81		19.43.40,41			C.
	α Andromedæ ...	17,7	33,1	48,2	3,5	19,0	34,0	49,3	0.0.3,54				4,00	49,00		0.0.53,08			C.
	B. (w.) o. 273 ...	41,1	54,6	8,4	21,7	35,2	48,7	2,0	0.15.21,67				22,16			0.16.11,26			C.
	B. (w.) o. 304 ...				29,6	43,4	56,9	10,3	0.17.29,74				30,20			0.18.19,30			C.
	B. (w.) o. 320 ...				27,7	41,3	55,1	8,3	0.18.41,29				41,75			0.19.30,85			C.
	B.A.C. 132. ....	33,4	47,0	0,1	13,7	27,5	40,6	54,4	0.25.13,81				14,35			0.26.3,46			C.
	B.A.C. 147. ....	35,7	49,1	2,5	16,0	29,6	43,0	56,4	0.27.16,04				16,58			0.28.5,69			C.
	15 Ceti. ....	9,2	22,5	36,3	49,5	3,2	16,6	30,0	0.29.49,63				50,17			0.30.39,28			C.
	β Ceti. ....	45,5	0,0	14,0	28,1	42,6	56,6	11,0	0.35.28,26				28,95	49,21		0.36.18,07			C.
	(a) B. (w.) o. 751 ...		13,9	27,0		54,4		21,3	0.42.40,76				41,23			0.43.30,36			C.
	H. C. 1731. ....		42,0	55,3	9,0	22,7		49,7	0.52.9,03				9,49			0.52.58,63			C.
	B. (w.) i. 43. ....			54,6	8,2	21,8	35,2	48,5	1.3.8,19				8,68			1.3.57,83			C.
	Polaris. ....	15,0	6,0	51,5	41,5	41,0			1.5.43,76				42,76						C.
	B. (w.) i. 160. ....	41,5	55,0	8,4	21,9	35,6	49,0	2,5	1.10.21,98				22,47			1.11.11,63			C.
	α Arietis. ....	26,7	41,3	55,9	10,4	25,2	39,7	54,3	1.58.10,50				10,95	49,18		1.59.0,16			C.
	H. C. 6317. ....	41,0	55,4	9,9	24,3	39,0	53,2	7,7	3.17.24,36				24,81			3.18.14,11			C.
	H. C. 6456. ....	6,0	20,1	34,4	48,6	2,9	17,0	31,1	3.21.48,59				49,04			3.22.38,35			C.
	H. C. 6549. ....		14,7	28,7	42,9	57,2	11,3	25,2	3.24.42,95				43,40			3.25.32,71			C.
	(b) * N.P.D. 72°. 7'.		49,0	3,0	17,0	31,5	45,5		3.27.17,21				17,66			3.28.6,98			C.
	16 Tauri. ....	37,7	52,2	7,0	21,6	36,6	51,3	5,9	3.35.21,75				22,21			3.36.11,53			C.
	20 Tauri. ....				22,6	37,4	52,1	7,0	3.36.22,70				23,16			3.37.12,48			C.
	B. (w.) III. 878. ...	7,9	21,8	35,7	49,6				3.44.49,64				50,08			3.45.39,42			C.
	B. (w.) III. 884. ...				4,5	18,8	32,6	46,4	3.45.4,71				5,15			3.45.54,48			C.
	Al <sup>1</sup> Tauri. ....	34,7	49,1	3,6	18,0	32,7	47,0	1,5	3.55.18,19				18,64			3.56.7,98			C.
	H. C. 7588. ....				10,5	26,2	40,4	55,0	3.57.11,33				11,78			3.58.1,13			C.
	Aldebaran. ....	4,7	18,6	32,7	46,6	0,9	14,8	28,7	4.26.46,72				47,16	49,34		4.27.36,54			C.
	σ <sup>1</sup> Tauri. ....	21,2	35,2	49,2	3,0	17,2	31,0	45,0	4.30.3,11				3,55			4.30.52,93			C.
	95 Tauri. ....			23,0	37,6	52,7	7,1	21,7	4.33.37,73				38,19			4.34.27,58			C.
	H. C. 8876. ....					0,5	15,3	30,0	4.34.45,83				46,29			4.35.35,68			C.
	(c) Rigel. ....	3,7	17,4	31,0	44,7	58,4	12,0	25,4	5.6.44,66				45,27	49,52		5.7.34,70			C.
Dec. 18	γ Aquilæ. ....				27,4	41,3	54,9	8,6	19.38.27,54				27,98	51,88	1,48	19.39.19,88			C.
	α Aquilæ. ....	7,3	20,9	34,5	48,0	1,8	15,1	29,0	19.42.48,09				48,54	51,89		19.43.40,45			C.
	α Ceti. ....	9,1	22,5	35,9	49,4	3,1	16,5	29,9	2.53.49,49				49,98	52,33		2.54.42,33			C.
	B. (w.) II. 1033. ...				33,6	47,6	1,2	15,0	2.57.33,67				34,11			2.58.26,46			C.
	δ Arietis. ....	45,2	59,4	13,6	27,5	42,2	56,4	10,7	3.2.27,86				28,30			3.3.20,66			C.
	ζ Arietis. ....					56,2	10,4	24,6	3.5.41,64				42,08			3.6.34,44			C.
	(d) H. C. 6125. ....	57,0	11,3	25,5	39,6	54,0			3.10.39,66				40,10			3.11.32,47			C.
	H. C. 6149. ....			11,2	25,6	40,0	53,9	8,1	3.11.25,57				26,01			3.12.18,38			C.
	β Tauri. ....	29,2	44,3	59,8	15,0	30,5	45,6	1,1	5.16.15,07				15,53	52,52		5.17.8,03			C.
Dec. 19	⊙ 1 L. ....	30,6	45,3	59,5	14,4	29,3	44,2	58,9	17.46.14,60				15,31		1,27	17.47.8,54			C.
	⊙ 2 L. ....	53,2	7,6	22,3	37,0	51,9	6,4	21,3	17.48.37,10				37,81			17.49.31,07			C.
	(e) α Aquilæ. ....	5,6	19,5	32,9	46,5	0,5	13,7	27,6	19.42.46,62				47,07	53,36					C.
Dec. 20	α Ceti. ....	6,8	20,2	33,6	47,2	0,7	14,0	27,6	2.53.47,16				47,85	54,45	0,91	2.54.42,50			C.
	(f) H. C. 5701. ....				42,1	56,3	10,7	24,7	2.56.42,27				42,72			2.57.37,37			C.
	B. (w.) II. 1067. ...			6,2	20,1	33,8	47,6	1,5	2.59.20,06				20,50			3.0.15,15			C.
	δ Arietis. ....		57,2	11,4	25,5	40,1	54,1	8,4	3.2.25,67				26,11			3.3.20,77			C.
	ζ Arietis. ....	56,4	10,7	25,0	39,4	53,8	8,1	22,6	3.5.39,43				39,87			3.6.34,53			C.
	H. C. 6230. ....		34,1	48,1	2,1				3.14.2,15				2,59			3.14.57,25			C.
	H. C. 6237. ....				15,1	29,3	43,1	57,2	3.14.15,18				15,62			3.15.10,28			C.
	H. C. 6317. ....			4,6	19,1	33,7	48,0	2,4	3.17.19,12				19,57			3.18.14,23			C.
	* N.P.D. 72°. 7'.	29,4	43,4	57,7	11,7				3.27.11,78				12,23			3.28.6,90			C.
	H. C. 6649. ....		22,7	36,8	51,0	5,3	19,4	33,5	3.28.51,06				51,51			3.28.46,18			C.
	η Tauri. ....	13,3	28,0	42,7	57,3	12,2	26,6	41,3	3.37.57,35				57,81			3.38.52,49			C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, -40<sup>s</sup>.308, -26<sup>s</sup>.907, -13<sup>s</sup>.520, -0<sup>s</sup>.067, +13<sup>s</sup>.579, +26<sup>s</sup>.870, +40<sup>s</sup>.353.

(a) Extremely faint from cloud. (b) Observed for H. C. 6649, which it precedes 39<sup>s</sup>: see Dec. 20. The N.P.D. is conjectural. (c) The companion was noticed and considered to be of Mag. 9. (d) The noted times were 1<sup>m</sup> greater, which the next observation shews to be wrong. (e) Clouded and tremulous. (f) Faint, and at times disappearing.



Month and Day.	NAME OF OBJECT.	Seconds of transit over the seven wires.							Concluded transit over the mean of the seven wires.	Correction of			Seconds of Meridian Transit.	Clock apparently Slow.	Adopted losing Rate.	Apparent R.A. from the Observation.			Observer.
		I	II	III	IV	V	VI	VII		Collimation Error.	Level Error.	Altitude Error.							
		s.	s.	s.	s.	s.	s.	s.		h.	m.	s.				h.	m.	s.	
Dec.20	$\omega^2$ Tauri.....	8,4	22,7	....	51,4	5,7	20,1	34,6	4. 7. 51,42	+4,5	+1,0	+9,8	51,86		0,91	4. 8. 46,56			C.
	$\phi$ Tauri.....	....	1,5	16,6	31,6	47,0	1,7	17,2	4. 10. 31,73				32,19			4. 11. 26,89			C.
	H. C. 8100.....	....	....	....	....	40,7	5,5	10,6	4. 11. 25,37				25,83			4. 12. 20,53			C.
	$\kappa^1$ Tauri.....	5,7	20,1	34,5	49,1	....	....	....	4. 15. 49,13				49,59			4. 16. 44,29			C.
	$\kappa^2$ Tauri.....	....	....	....	....	6,9	21,3	35,8	4. 15. 52,31				52,76			4. 16. 47,46			C.
	(a) $\theta^2$ Tauri.....	46,6	0,4	14,4	28,3	42,4	56,2	10,4	4. 19. 28,39				28,82			4. 20. 23,52			C.
	(a) 85 Tauri.....	58,4	12,2	26,1	40,2	54,4	8,1	22,0	4. 22. 40,20				40,63			4. 23. 35,34			C.
	(a) Aldebaran.....	59,3	13,3	27,2	41,1	55,5	9,2	23,3	4. 26. 41,27				41,71	54,81		4. 27. 36,42			C.
	(a) H. C. 8804.....	39,5	54,0	9,0	23,4	38,6	53,0	....	4. 32. 23,60				24,06			4. 33. 18,77			C.
	95 Tauri.....	....	....	17,7	32,4	47,4	2,0	16,6	4. 32. 32,53				32,99			4. 34. 27,70			C.
	Rigel.....	58,5	12,3	25,5	....	53,2	6,6	20,3	5. 6. 39,39				40,01	54,81		5. 7. 34,74			C.
	$\beta$ Tauri.....	27,1	42,2	....	12,8	28,4	43,4	58,7	5. 16. 12,87				13,33	54,74		5. 17. 8,07			C.
	(b) H. C. 10263.....	13,0	27,4	41,4	55,7	....	....	....	5. 19. 55,65				56,10			5. 20. 50,84			C.
	H. C. 10280.....	....	....	....	25,6	40,3	54,0	8,4	5. 20. 25,82				26,27			5. 21. 21,01			C.
	H. C. 10528.....	59,9	14,7	29,8	44,7	0,0	14,7	29,8	5. 27. 44,80				45,27			5. 28. 40,02			C.
	$\alpha$ Orionis.....	44,0	57,4	11,0	24,5	38,2	51,4	5,2	5. 46. 24,53				24,98	54,81		5. 47. 19,74			C.
Dec.22	(c) $\beta$ Ceti.....	38,6	53,0	7,2	21,2	35,5	49,8	4,0	0. 35. 21,32				22,01	56,08	1,02				C.
Dec.23	(d) $\odot$ 1 L.....	....	....	43,3	57,8	....	27,2	41,8	18. 3. 57,87				58,58		1,11	18. 4. 55,47			C.
	$\odot$ 2 L.....	....	....	....	20,1	35,2	49,4	....	18. 6. 20,18				20,89			18. 7. 17,78			C.
Dec.26	(e) $\odot$ 1 L.....	28,6	43,3	58,2	12,8	27,7	42,2	56,9	18. 17. 12,81				13,52		1,46	18. 18. 15,60			C.
	$\odot$ 2 L.....	51,2	5,9	20,5	35,1	50,1	4,6	19,6	18. 19. 35,29				36,00			18. 20. 38,09			C.
	$\alpha$ Aquilæ.....	....	10,8	24,2	37,8	51,6	5,0	....	19. 42. 37,89				38,34	62,11		19. 43. 40,51			C.
	$\alpha$ Arietis.....	....	....	....	57,2	11,8	26,2	40,9	1. 57. 57,14				57,59	62,46		1. 59. 0,14			C.
	$\alpha$ Ceti.....	....	12,2	25,6	39,3	52,6	6,0	....	2. 53. 39,15				39,64	62,63		2. 54. 42,25			C.
	(f) Sirius.....	0,4	14,5	28,5	42,6	57,0	10,6	24,7	6. 37. 42,61				43,29	62,97		6. 38. 46,12			C.
Dec.27	$\odot$ 1 L.....	53,7	8,2	22,9	37,7	52,6	7,3	21,9	18. 21. 37,76				38,47			18. 22. 42,02			C.
	$\odot$ 2 L.....	16,2	30,9	45,5	0,0	15,1	29,6	44,2	18. 24. 0,21				0,92			18. 25. 4,47			C.
Dec.28	$\odot$ 1 L.....	18,4	33,0	47,7	2,4	17,2	31,8	46,6	18. 26. 2,44				3,15		1,27	18. 27. 8,13			C.
	$\odot$ 2 L.....	....	55,6	10,1	24,8	39,8	54,1	....	18. 28. 24,89				25,60			18. 29. 30,58			C.
	(g) Rigel.....	47,8	1,6	15,1	28,6	42,4	55,9	9,5	5. 6. 28,70				29,32	65,54					C.
Dec.30	$\alpha$ Arietis.....	7,8	22,7	37,3	52,1	6,8	21,2	35,8	1. 57. 51,95				52,40	67,61					C.

ILLUMINATION WEST. INTERVALS for an Equatorial star of wires I, II, III, IV, V, VI, VII, from the mean of the seven wires, - 40°,308, - 26°,907, - 13°,520, - 0°,067, + 13°,579, + 26°,870, + 40°,353.

(a) 'Images not very good this night.' (b) 'South-preceding the next.' (c) A tremulous patch of light: the instrument covered with moisture.  
 (d) Very faint at times from clouds passing: the observation doubtful. (e) High wind. (f) No definition. (g) Cloudy.







APPARENT NORTH POLAR DISTANCES

OBSERVED WITH THE

MURAL CIRCLE

IN THE YEAR 1854.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		° ' "	Inch.	°	°	"	° ' "	
Jan. 2	(a) ☉ N.L.....	2. 33,0	36,9	40,1	34,1	35,0	39,8	+12,8	14,380		254. 10. 45,39	29,126	29,3	28,7	215,52	112. 39. 38,89	T.
	☉ S.L.....	0. 2,3	7,0	7,3	3,5	4,0	11,7		14,380		254. 43. 13,81				223,62	113. 12. 15,41	T.
	(b) Euterpe B.....	4. 60,0	62,9	65,3	59,0	61,7	68,8		6,472		216. 10. 54,71	29,242	21,0	17,3	45,70	74. 36. 58,39	T.
	(c) Irene B.....	4. 42,8	48,0	48,4	43,0	45,0	51,6		13,005		215. 8. 24,03	29,248	21,8	18,0	43,94	73. 34. 25,95	T.
	(d) B.A.C. 1272.....	1. 40,6	42,7	46,0	38,9	40,4	46,9		7,805		214. 37. 8,24				43,10	73. 3. 9,32	T.
	(e) H. C. 7677.....	...	...	...	...	...	...		0,102		214. 39. 48,90				43,17	73. 5. 50,05	T.
Jan. 3	(f) Zenith Point....	2. 0,6	6,2	8,6	2,5	4,4	8,4		9,767		179. 21. 50,02						T.
Jan. 13	Zenith Point....	1. 57,7	63,9	67,0	60,5	62,9	64,5	+10,9	9,678		179. 21. 49,34						B.
	Zenith Point....	2. 16,2	22,0	25,0	18,4	20,5	22,0		10,522		179. 21. 49,78						B.
Jan. 14	☉ N.L.....	0. 3,2	9,4	9,1	4,6	9,3	9,8		12,123		252. 34. 2,47	29,641	39,3	36,8	194,35	111. 2. 35,26	B.
	☉ S.L.....	2. 30,2	35,2	36,8	31,5	34,7	35,5		12,123		253. 6. 29,80				201,03	111. 35. 9,27	B.
	B.A.C. 1035 R....	0. 13,5	20,5	21,6	17,0	20,3	22,4		8,750	-1	355. 50. 24,37	29,704	37,1	31,4	3,71	41. 18. 36,90	B.
	B.A.C. 1035.....	3. 5,2	7,9	13,8	4,8	7,4	10,4		8,750	+1	182. 53. 14,76					41. 18. 36,91	B.
	B.A.C. 1089 R....	1. 3,7	9,3	11,8	5,6	7,9	11,4		8,530	-1	354. 36. 18,32				5,01	42. 32. 44,25	B.
	B.A.C. 1089.....	2. 6,5	9,4	13,7	6,1	8,9	12,8		8,530	+2	184. 7. 20,82					42. 32. 44,27	B.
Jan. 19	(g) ☉ S.L.....	2. 3,3	7,6	8,8	3,2	4,0	8,7	+8,6	5,343		252. 8. 22,80	29,972	42,6	42,0	189,36	110. 36. 50,24	B.
	☉ N.L.....	4. 36,0	41,2	38,9	37,2	39,4	39,9		5,343		251. 35. 56,39				183,37	110. 4. 17,84	B.
Jan. 20	(h) ☉ N.L.....	2. 4,4	6,2	10,5	3,2	5,6	8,6		5,904		251. 23. 11,59	29,877	43,5	47,4	178,50	109. 51. 28,17	B.
Jan. 21	☉ N.L.....	1. 16,8	22,0	21,6	17,6	19,6	22,4		12,795		251. 10. 1,22	30,182	43,8	46,8	178,27	109. 38. 17,57	B.
	☉ S.L.....	3. 39,7	44,6	47,1	39,7	43,2	45,2		12,795		251. 42. 25,17				184,00	110. 10. 47,25	B.
Jan. 24	Zenith Point....	2. 28,5	32,8	36,5	28,4	29,6	33,0		11,028		179. 21. 49,92						B.
Jan. 25	(g) ☉ N.L.....	3. 9,1	13,0	16,1	8,7	9,4	14,9		7,672		250. 13. 40,48	30,058	40,6	40,5	170,60	108. 41. 49,16	B.
	☉ S.L.....	0. 36,0	40,6	39,9	36,1	38,6	41,6		7,672		250. 46. 6,70				175,84	109. 14. 20,62	B.
Jan. 26	H. C. 5823.....	1. 43,7	47,4	48,0	43,7	45,0	49,0		8,790		214. 51. 51,03	30,476	41,0	40,5	43,20	73. 17. 52,31	T.
	H. C. 6050.....	1. 60,0	61,8	63,1	57,9	59,7	62,9		9,025		214. 32. 0,95				42,67	72. 58. 1,70	T.
	♄ Tauri.....	1. 22,7	25,9	26,9	20,9	21,4	25,8		9,025		210. 11. 23,81	30,524	37,9	36,6	36,50	68. 37. 18,39	T.
	H. C. 9704.....	0. 47,9	50,0	52,3	45,5	47,0	51,3				202. 45. 49,23				26,47	61. 11. 33,78	T.
	(i) H. C. 9827.....	4. 49,9	53,1	52,9	48,7	49,7	53,2				202. 49. 51,20				26,56	61. 15. 35,84	T.
	H. C. 9866.....	...	...	...	...	...	...		8,860		202. 49. 54,12				26,56	61. 15. 38,76	T.
	H. C. 9933.....	...	...	...	...	...	...		8,992		202. 49. 51,37				26,56	61. 15. 36,01	T.
	H. C. 10105.....	0. 23,7	26,3	27,1	20,0	23,6	27,8				214. 30. 24,87				43,05	72. 56. 26,00	T.
Jan. 28	H. C. 6518.....	0. 44,1	49,1	48,7	44,0	47,0	49,9	+7,5			212. 40. 47,33	30,126	41,1	38,8	39,49	71. 6. 45,07	T.
	(i) B. (w.) III. 603..	4. 13,0	18,0	14,9	12,7	14,2	19,6				218. 29. 15,22				48,85	76. 55. 22,32	T.
	H. C. 6924.....	0. 46,9	51,0	50,0	46,3	49,3	51,0				215. 45. 49,55				44,29	74. 11. 52,09	T.
	B. (w.) IV. 86....	2. 51,1	54,0	53,8	49,1	52,0	53,4				217. 22. 53,19	30,130	39,7	37,0	47,14	75. 48. 58,58	T.
	B. (w.) IV. 103....	...	...	...	...	...	...		7,620		217. 23. 21,73				47,16	75. 49. 27,14	T.
	B. (w.) IV. 105....	...	...	...	...	...	...		20,860	+4	217. 18. 46,20				47,03	75. 44. 51,48	T.
	B. (w.) IV. 190....	...	...	...	...	...	...		10,706		217. 22. 17,37				47,13	75. 48. 22,75	T.
	♄ Tauri.....	1. 39,0	41,6	43,9	38,0	40,9	42,3				209. 36. 41,38				35,18	68. 2. 34,81	T.
	H. C. 8468.....	2. 25,1	27,0	29,9	24,3	24,1	26,6				208. 32. 26,77				33,68	66. 58. 18,70	T.
	H. C. 8599.....	2. 29,0	31,7	33,2	26,9	28,4	32,0				214. 7. 30,83				41,86	72. 33. 30,94	T.
Jan. 30	(k) ☉ S.L.....	3. 18,1	22,3	22,9	18,8	19,4	22,9		10,050		249. 27. 59,67	30,068	51,4	54,0	159,21	107. 55. 57,13	T.
Jan. 31	Zenith Point....	2. 4,5	7,5	9,2	4,4	4,5	7,7		9,819		179. 21. 49,75						T.
Feb. 2	☉ N.L.....	4. 40,7	43,6	46,9	40,7	41,0	43,9		8,699		248. 4. 50,26	30,190	43,4	41,7	152,55	106. 32. 41,06	T.
	☉ S.L.....	2. 4,4	10,0	9,2	5,6	4,7	10,9		8,699		248. 37. 14,28				156,66	107. 5. 9,19	T.
	(l) H. C. 6288.....	0. 16,9	20,0	19,7	14,6	17,0	20,2				214. 20. 18,13	30,270	40,0	37,0	42,39	72. 46. 18,77	T.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Cloudy. (b) Negative correction for Runs. Correction to wire-reading for this and the next = + 0",046. (c) Extremely faint and bisected somewhat doubtfully. 'The Temperature has risen a little.' (d) No definition. (e) 'Only one star.' (f) The mercury unsteady. (g) Great motion.  
 (h) Cloud and unsteadiness. (i) Negative correction for Runs. (k) Great motion and no definition. (l) Very faint.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for S.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"					Inch.	"	"		"	"	"	
Feb. 2	B.A.C. 1096.....	2. 52,7	54,7	58,0	49,9	52,6	55,1	+7,5	12,779	+2 1/2	214. 12. 54,57	30,270	40,0	37,0	42,19	72. 38. 55,01	T.		
	B. (w.) III. 555..	3. 39,9	41,7	46,0	37,4	40,7	41,8				216. 53. 42,41				46,54				
	B. (w.) III. 550..	...	...	...	...	...	...				216. 52. 23,97				46,51				
	(a) B. (w.) III. 688..	1. 53,2	54,6	57,0	49,2	53,8	56,4				217. 46. 54,52				48,05				
	(b) B.A.C. 1178.....	3. 62,5	61,9	68,6	59,9	62,7	65,8				208. 7. 50,37				33,27				
	B.A.C. 1188.....	...	...	...	...	...	...				208. 9. 59,95				33,32				
	H. C. 7242.....	4. 3,9	3,2	10,1	1,4	2,7	6,0				208. 24. 5,57		30,288	38,4	36,6	33,70			
	H. C. 7460.....	1. 42,2	44,7	47,0	40,3	42,2	45,1				207. 1. 44,02					31,82			
	H. C. 7646.....	0. 41,2	44,3	44,0	39,8	41,9	45,0				215. 25. 42,88					44,19			
	(c) H. C. 7790.....	4. 41,0	44,7	45,0	39,0	41,9	43,9				208. 22. 23,15					33,69			
	H. C. 7805.....	...	...	...	...	...	...				208. 25. 35,73					33,77			
	(c) 55 Tauri.....	3. 52,2	57,1	55,6	51,6	53,9	56,9				215. 23. 54,27					44,19			
	(c) Aldebaran R....	4. 4,2	8,0	7,0	4,2	3,9	9,0				323. 22. 24,89		30,288	38,0	35,4	44,18			
	Aldebaran .....	2. 51,2	53,7	57,6	50,6	52,8	53,9				215. 21. 13,09					73. 47. 15,52			
	* R. 7 <sup>h</sup> . 8 <sup>m</sup> . 41 <sup>s</sup> ..	4. 11,0	9,5	16,3	8,0	7,9	13,0				245. 5. 23,68					103. 32. 56,74			
	B. (w.) VII. 451..	3. 3,1	3,1	9,9	0,9	0,6	6,0				244. 44. 9,88		30,302	34,8	33,5	134,81			
	* R. 7 <sup>h</sup> . 19 <sup>m</sup> . 50 <sup>s</sup> ..	1. 32,6	32,8	35,9	29,0	30,1	36,4				244. 26. 33,18					130,89			
	(d) B. (w.) VII. 757..	0. 60,0	60,5	63,9	56,7	57,2	64,3				244. 1. 0,68					128,41			
	(e) B. (w.) VII. 770..	...	...	...	...	...	...				244. 0. 53,38					128,40			
	(f) Melpomene B....	3. 12,0	10,7	16,0	8,2	8,3	16,9				218. 43. 20,13		30,316	33,4	30,3	50,47			
	(f)(g) Hygeia B.....	3. 47,0	46,0	52,3	44,4	44,7	50,9				218. 34. 33,54					77. 9. 28,85			
Feb. 3	⊙ S.L. ....	0. 18,6	20,9	21,3	18,5	15,9	24,1				248. 19. 44,24		30,290	39,5	36,7	156,64			
	⊙ N.L. ....	2. 53,2	55,4	59,3	53,7	51,8	57,0				247. 47. 20,07					152,41			
	H. C. 6369.....	1. 38,6	39,9	42,4	35,7	37,2	40,2				213. 11. 39,43		30,264	39,6	36,4	40,66			
	A <sup>1</sup> Tauri.....	0. 50,8	54,1	55,7	49,8	51,6	54,7				209. 53. 18,85					35,82			
	A <sup>2</sup> Tauri.....	...	...	...	...	...	...				209. 57. 22,87					35,91			
	H. C. 7790.....	3. 32,1	32,8	39,1	30,2	30,9	33,2				208. 22. 22,74					33,69			
	H. C. 7805.....	...	...	...	...	...	...				208. 25. 34,33					33,76			
	H. C. 7862.....	...	...	...	...	...	...				208. 21. 54,52					33,67			
	φ Tauri.....	4. 15,6	14,4	21,5	12,7	12,9	16,8				204. 34. 16,72		30,256	36,3	33,8	28,60			
	(h) H. C. 8267.....	2. 9,2	9,9	14,0	7,0	7,0	10,9				208. 7. 10,22					33,47			
	Aldebaran R....	2. 34,2	35,9	39,8	33,5	33,0	36,8				323. 22. 25,13					44,28			
	Aldebaran .....	1. 23,6	25,0	28,3	22,1	20,7	26,3				215. 21. 13,86					73. 47. 16,90			
	(i) B. (w.) v. 1479..	1. 37,9	38,6	41,8	33,7	34,9	40,3				245. 37. 25,39		30,236	36,2	34,3	137,66			
	B. (w.) v. 1487..	...	...	...	...	...	...				245. 34. 8,32					137,31			
	(c)(k) B. (w.) vi. 348..	4. 38,8	42,2	42,8	36,8	37,8	44,7				245. 50. 47,42					139,11			
	B. (w.) vi. 428..	...	...	...	...	...	...				245. 46. 55,48					138,69			
	(c)(l) Melpomene....	4. 24,2	28,8	27,9	22,9	23,7	31,2				218. 34. 49,16		30,200	37,0	33,2	49,72			
	(m) Melpomene B....	...	...	...	...	...	...				218. 34. 44,70					77. 0. 57,13			
	(a) Hygeia .....	1. 37,9	40,1	42,8	35,1	36,4	41,7				218. 31. 53,23					76. 58. 1,15			
	(m) Hygeia B.....	...	...	...	...	...	...				218. 31. 52,98					76. 58. 0,90			
Feb. 4	(c) ⊙ N.L. ....	4. 45,8	49,9	48,2	44,7	45,2	50,0	+7,9	9,528		247. 29. 36,24	29,960	40,9	40,5	147,35	105. 57. 21,52	T.		
	⊙ S.L. ....	2. 6,7	9,3	10,1	5,8	6,6	10,8				248. 1. 57,76				151,40				
Feb. 6	⊙ S.L. ....	1. 38,9	44,9	42,3	39,3	43,1	42,4		11,981		247. 25. 40,10	29,964	52,3	55,8	142,31	105. 53. 20,34	T.		
	⊙ N.L. ....	4. 13,4	17,5	19,0	13,9	14,6	17,1				246. 53. 14,88				138,58				
	B. (w.) vi. 348..	0. 33,1	37,9	35,9	31,9	33,9	38,8				245. 50. 51,96		29,998	49,3	49,0	133,85			
	* R. 6 <sup>h</sup> . 12 <sup>m</sup> . 49 <sup>s</sup> ..	...	...	...	...	...	...				245. 49. 16,35					133,68			
	B. (w.) vi. 428..	...	...	...	...	...	...				245. 47. 0,47					133,44			
	(c) H. C. 12597.....	3. 53,4	58,0	55,4	52,5	54,7	58,9				210. 33. 55,20					35,48			
	(c) B. (w.) vi. 990..	3. 37,9	42,6	38,2	33,9	37,4	41,2				245. 33. 38,18					132,06			
	H. C. 12962.....	3. 2,9	4,0	7,2	0,9	2,6	7,0				208. 3. 4,92					32,06			
	(c)(n) * R. 6 <sup>h</sup> . 42 <sup>m</sup> . 8 <sup>s</sup> ..	4. 38,9	43,0	40,6	36,9	38,4	42,8				245. 44. 36,29		29,998	49,0	48,4	133,20			
	B. (w.) vi. 1286..	...	...	...	...	...	...				245. 46. 16,61					133,36			
	B. (w.) vi. 1827..	0. 21,9	25,4	22,9	19,4	20,5	26,1				245. 17. 37,72					130,60			
	H. C. 13848.....	...	...	...	...	...	...				245. 22. 13,09					131,06			
	B. (w.) vii. 22...	...	...	...	...	...	...				245. 18. 11,97					130,65			

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Very faint. (b) 'This precedes the next about 50s.' (c) Negative correction for Runs. (d) 'Not good.' Preceding stars were noticed: the next followed about 19s. (e) 'Good.' (f) Correction to wire-reading = + 0",062. (g) Faint. (h) 'But one star.' (i) 'Precedes the next. about 22s.' (k) 'Preceded by another of equal magnitude.' (l) Faint, and quite alone. (m) Correction to wire-reading = + 0",059. (n) 'This preceded the next 4s.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		"	Inch.	"	"		"	
Feb. 6	(a) * $\mathcal{R}$ . 7 <sup>h</sup> . 8 <sup>m</sup> . 41 <sup>s</sup> ..	0. 21,7	26,8	25,0	20,8	21,1	27,4	+7,9	8,691		245. 5. 30,35	29,998	49,0	48,4	129,38	103. 32. 57,66	T.
Feb. 7	Zenith Point ....	2. 1,5	3,1	5,8	0,4	0,4	5,0		9,631		179. 21. 50,07						T.
	H. C. 8705.....	0. 46,4	47,9	48,8	43,9	46,8	49,8				211. 10. 47,48	30,012	42,7	42,0	36,89	69. 36. 42,30	T.
	B. (w.) iv. 896...	2. 30,8	31,5	35,9	23,0	31,0	33,9				216. 17. 32,52				44,68	74. 43. 35,13	T.
	H. C. 9196.....	2. 24,7	25,1	28,4	21,6	23,4	27,1				207. 52. 25,68				32,30	66. 18. 15,91	T.
	H. C. 9331.....	2. 34,1	34,9	38,0	30,7	33,3	36,3				208. 2. 35,23			40,6	32,62	66. 28. 25,78	T.
	(b) H. C. 9484.....	4. 52,9	55,4	55,1	50,6	52,3	55,8				204. 4. 53,65				27,46	62. 30. 39,04	T.
	B. (w.) iv. 1361..	1. 57,8	59,7	60,4	54,9	57,8	61,0			+2½	244. 51. 58,91				130,20	103. 19. 27,04	T.
	B. (w.) vi. 348...	3. 57,9	58,2	63,9	53,9	56,9	60,2		3,692		245. 50. 50,25	30,004	42,1	40,7	136,20	104. 18. 24,38	T.
	(c) * $\mathcal{R}$ . 6 <sup>h</sup> . 12 <sup>m</sup> . 49 <sup>s</sup> ..	...	...	...	...	...	...		8,319		245. 49. 13,75				136,03	104. 16. 47,71	T.
	B. (w.) vi. 428...	...	...	...	...	...	...		14,804		245. 46. 48,50				135,79	104. 14. 32,22	T.
	H. C. 12411.....	1. 9,8	10,8	12,2	5,8	8,3	12,2				207. 56. 10,17				32,46	66. 22. 0,56	T.
	H. C. 12573.....	1. 41,7	42,0	43,9	37,9	40,0	43,9				203. 11. 42,02				26,33	61. 37. 26,28	T.
	B. (w.) vi. 990...	3. 35,9	36,9	40,3	31,7	33,9	38,4				245. 33. 37,13			40,3	134,50	104. 1. 9,56	T.
	H. C. 12946.....	1. 36,2	38,1	39,7	32,3	35,0	38,8				207. 46. 37,10				32,28	66. 12. 27,31	T.
	(b) B.A.C. 2221.....	3. 50,2	54,2	51,9	46,2	50,0	54,9			+1½	245. 48. 50,84				136,11	104. 16. 24,88	T.
	(d) B. (w.) vi. 1286..	...	...	...	...	...	...		16,512		245. 46. 15,58				135,83	104. 13. 49,34	T.
	B. (w.) vi. 1474..	0. 54,8	56,4	57,2	51,1	53,6	58,5				245. 30. 55,50	29,990	41,3	39,5	134,38	103. 58. 27,81	T.
	B. (w.) vi. 1757..	0. 5,0	6,6	6,9	0,1	2,8	8,4				245. 30. 4,98				134,30	103. 57. 37,21	T.
	H. C. 13848.....	2. 9,2	10,0	11,9	4,9	7,1	11,9				245. 22. 9,73				133,47	103. 49. 41,13	T.
	(b) 51 Geminorum ..	4. 46,8	49,7	49,1	44,7	46,6	50,4				215. 9. 47,83				43,07	73. 35. 48,83	T.
	(e) * $\mathcal{R}$ . 7 <sup>h</sup> . 8 <sup>m</sup> . 41 <sup>s</sup> ..	0. 28,0	29,5	30,5	23,9	26,0	31,2				245. 5. 28,32				131,76	103. 32. 58,01	T.
	(f)(g) Melpomene B...	0. 31,2	33,8	34,7	29,0	30,5	35,7		8,768	+2	218. 0. 36,72	29,980	40,0	38,3	47,85	76. 26. 42,50	T.
	Hygeia .....	0. 18,2	21,1	21,6	16,2	17,1	22,9		7,980	+2	218. 20. 40,87	29,978	39,4	38,0	48,45	76. 46. 47,25	T.
	(g) Hygeia B. ....	...	...	...	...	...	...		8,006	+2	218. 20. 39,46				48,45	76. 46. 45,84	T.
	(g)(h) Fortuna B.....	1. 37,0	38,5	38,9	34,3	35,0	39,1		7,149	+2	220. 27. 15,31				52,20	78. 53. 25,44	T.
	(g) Lutetia B. ....	1. 14,3	15,9	18,1	12,3	12,7	19,0		6,181	+2	216. 2. 13,75	29,970	38,8	37,9	44,59	74. 28. 16,27	T.
Feb. 8	(b)(h) * $\mathcal{R}$ . 6 <sup>h</sup> . 12 <sup>m</sup> . 49 <sup>s</sup> ..	3. 44,4	48,3	46,1	41,9	42,9	49,1		7,560		245. 49. 15,15	30,100	41,7	41,5	136,24	104. 16. 49,32	T.
	(i) B. (w.) vi. 428...	...	...	...	...	...	...		14,059		245. 46. 59,61				135,99	104. 14. 33,53	T.
	(k) H. C. 12454.....	1. 56,5	57,9	61,0	53,4	55,8	59,3		5,912		214. 3. 2,23				41,31	72. 29. 1,47	T.
	(b) * $\mathcal{R}$ . 7 <sup>h</sup> . 8 <sup>m</sup> . 41 <sup>s</sup> ..	4. 13,3	17,9	16,8	11,0	12,2	8,7		5,479		245. 5. 26,55	30,116	42,0	41,7	131,70	103. 32. 56,18	T.
	(l) B. (w.) vii. 399...	...	...	...	...	...	...		12,854		245. 2. 52,74				131,44	103. 30. 22,11	T.
	(m) * $\mathcal{R}$ . 7 <sup>h</sup> . 16 <sup>m</sup> . 39 <sup>s</sup> ..	1. 41,3	44,0	45,6	38,7	40,8	45,0		8,391		244. 36. 55,72				128,87	103. 4. 22,52	T.
	* $\mathcal{R}$ . 7 <sup>h</sup> . 22 <sup>m</sup> . 33 <sup>s</sup> ..	2. 54,8	56,0	60,7	52,5	54,7	58,0		8,600		244. 23. 5,24				127,53	102. 50. 30,70	T.
Feb. 9	(n) (b) $\odot$ N.L. ....	4. 41,8	48,0	43,6	41,9	40,8	45,3		17,868		245. 56. 38,53	29,944	44,6	47,0	134,77	104. 24. 11,23	T.
	$\odot$ S.L. ....	2. 4,3	9,2	8,4	2,8	3,7	8,0		17,868		246. 29. 1,67				138,30	104. 56. 37,90	T.
	B. (w.) iv. 896...	2. 22,4	25,0	28,0	22,3	23,1	26,5		8,631		216. 17. 32,88	30,080	39,7	36,0	45,35	74. 43. 36,16	T.
	(b) $\kappa$ Tauri .....	4. 50,1	54,3	53,5	48,7	49,6	52,0				206. 44. 51,33				31,26	65. 10. 40,52	T.
	H. C. 9385.....	2. 3,0	5,9	8,3	1,3	2,1	6,0				205. 7. 4,98				29,12	63. 32. 52,03	T.
	H. C. 9387.....	...	...	...	...	...	...		5,459	+2½	205. 8. 19,30				29,15	63. 34. 6,38	T.
	H. C. 9566.....	1. 25,2	28,1	29,9	24,0	22,9	27,7				204. 46. 26,67				28,67	63. 12. 13,27	T.
	(o) B. (w.) iv. 1361..	1. 56,1	58,0	61,0	54,9	55,4	58,1			+2½	244. 51. 57,55				131,76	103. 19. 27,24	T.
	H. C. 9809.....	1. 51,0	53,1	55,8	47,6	49,9	53,1				205. 46. 52,25	30,092	39,7	35,4	30,04	64. 12. 40,22	T.
	$\beta$ Tauri R.....	0. 10,0	13,9	13,9	10,0	9,1	4,1		14,500		335. 38. 15,51				26,57	61. 31. 9,13	T.
	$\beta$ Tauri .....	2. 18,0	19,0	22,0	14,1	16,0	18,7		14,500		203. 5. 23,86					61. 31. 8,36	T.
	(b) H. C. 10304.....	4. 54,6	58,2	57,1	53,0	54,6	57,8				203. 54. 55,85				27,62	62. 20. 41,40	T.
	B. (w.) v. 1479..	2. 27,3	29,0	31,6	23,9	25,0	29,7				245. 37. 28,40	30,102	39,0	34,9	136,89	104. 5. 3,22	T.
	B. (w.) v. 1500...	...	...	...	...	...	...		3,597		245. 39. 21,09				137,09	104. 6. 56,11	T.
	$\gamma^2$ Orionis .....	2. 52,3	55,0	58,3	50,7	52,3	55,0				215. 22. 54,70				44,00	73. 48. 56,63	T.
	H. C. 12013.....	2. 42,1	43,8	47,2	40,3	40,9	43,0			+1½	204. 7. 43,77				27,93	62. 33. 29,63	T.
	H. C. 12170.....	0. 38,0	41,0	41,3	35,1	37,2	40,0			+2¼	213. 50. 39,19				41,57	72. 16. 38,69	T.
	B. (w.) vi. 990...	3. 9,7	10,4	13,6	6,3	6,8	12,7		7,802		245. 33. 35,74	30,120		34,7	136,62	104. 1. 10,29	T.
	(p) Melpomene B...	2. 52,8	55,0	57,3	50,7	52,8	55,3		6,401	+1	217. 43. 48,20			38,6	47,56	76. 9. 53,69	T.
	(p) Hygeia B. ....	3. 14,3	15,3	19,9	11,9	13,2	17,9		4,061	+1	218. 14. 58,45	30,162	38,0	33,7	49,02	76. 41. 5,40	T.
	(q) B. (w.) ix. 234..	...	...	...	...	...	...		8,082		218. 13. 35,42				48,98	76. 39. 42,33	T.
	(p)(r) Fortuna B.....	0. 46,0	49,0	49,6	43,9	44,9	47,0		6,080	+1	220. 16. 47,04	30,170	37,6	33,6	52,70	78. 42. 57,67	T.

ONE REVOLUTION of the MICROMETER = 20", 856. ONE INTERVAL from the middle wire for an Equatorial Star = 16", 6. ASSUMED CO-LATITUDE = 37°. 47'. 8", 00.

(a) Cloudy. The recorded Circle reading has been increased 5'. (b) Negative correction for Runs. (c) Doubtful bisection, the star being very faint. (d) 'One of equal Mag. north-preceding.' (e) Doubtful observation, the star being faint. (f) 'The preceding of two.' (g) Correction to wire-reading = + 0", 052. (h) Very faint. (i) 'Good.' (j) 'No star seen in the place of No. 21 of the list in Vol. xiv (p. 8) of the Monthly Notices of the R. Ast. Soc.' (k) Seen but a few seconds: cloudy. (l) 'Clouded, waving, and badly defined.' (m) 'A fainter north-following.' (n) 'Bad observation, the star being very unsteady and ill-defined.' (o) 'Bad observation, the star being very unsteady and ill-defined.' (p) Reduction to wire-reading = + 0", 043. (q) 'Brighter than the preceding object.' (r) Extremely faint: no object near it.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		o' ' "	inch.	o	o	"	o' ' "	
Feb. 10	⊙ N.L. ....	3. 17,7	17,3	23,1	13,8	15,3	18,2	+7,9	12,040		245. 37. 15,03	30,226	39,7	39,8	136,01	104. 4. 48,97	T.
	⊙ S.L. ....	0. 39,8	43,1	43,8	38,1	38,3	44,1		12,040		246. 9. 37,98				139,40	104. 37. 15,31	T.
Feb. 13	Zenith Point. ....	0. 57,6	59,0	57,6	59,7	59,3	60,9	+5,3	9,569		224. 45. 47,31						C.
	(a) Hygeia. ....	2. 13,0	11,8	14,3	10,4	10,6	13,7	+4,1	7,941		263. 27. 34,69	30,590	32,2	25,8	50,22	76. 29. 46,89	T.
Feb. 14	(b)(c) ⊙ S.L. ....	3. 50,0	51,2	49,2	49,9	51,8	49,5		9,057	+2½	290. 13. 49,30	30,500	36,7	37,5	132,97	103. 17. 24,25	T.
	⊙ N.L. ....	1. 30,2	30,0	31,3	30,3	29,9	30,0		9,057	+2½	289. 41. 29,69				129,76	102. 45. 1,43	T.
	Zenith Point. ....	1. 1,0	1,5	2,4	1,7	2,3	3,0		9,772		224. 45. 46,02						T.
Feb. 16	(d) ⊙ N.L. ....	0. 37,3	37,1	38,4	37,9	37,4	36,8		9,711		289. 0. 22,74	29,972	36,8	38,0	123,55	102. 3. 48,27	T.
	⊙ S.L. ....	2. 56,0	56,4	58,2	55,1	56,5	55,2		9,711		289. 32. 41,80				126,55	102. 36. 10,33	T.
Feb. 17	H. C. 11921. ....	0. 43,9	43,0	44,5	44,6	45,0	44,2		10,958		254. 45. 3,46	29,320	37,0	35,6	33,98	67. 46. 59,42	T.
	H. C. 11930. ....	...	...	...	...	...	...		6,528		254. 46. 35,86				34,01	67. 48. 31,85	T.
	(e) H. C. 12217. ....	0. 57,4	55,7	57,1	57,0	57,2	57,6				253. 10. 57,13				31,87	66. 12. 50,98	T.
	(e) * R. 6 <sup>h</sup> . 19 <sup>m</sup> . 57 <sup>s</sup> . ....	3. 31,0	31,3	32,3	32,1	30,7	34,4		7,394		260. 39. 5,95				42,60	73. 41. 10,53	T.
	H. C. 12356. ....	...	...	...	...	...	...		9,662	+2½	260. 38. 18,91				42,57	73. 40. 23,46	T.
	H. C. 12586. ....	0. 32,7	34,6	33,6	34,1	35,9	34,5				255. 25. 34,32				34,91	68. 27. 31,21	T.
	(b) H. C. 12716. ....	4. 49,3	49,0	47,1	49,0	50,2	49,7				252. 14. 49,02				30,63	65. 16. 41,63	T.
	B.A.C. 2221. ....	2. 50,3	52,1	52,1	51,8	51,3	51,9			+2½	291. 12. 51,73	29,208	37,3	35,2	134,40	104. 16. 28,11	T.
Feb. 18	⊙ S.L. ....	1. 15,9	15,2	15,0	17,8	14,0	18,0		10,290		288. 50. 49,27	29,480	36,5	37,2	120,89	101. 54. 12,14	T.
	(b) ⊙ N.L. ....	3. 55,7	54,3	52,7	58,0	55,4	57,2		10,290		288. 18. 28,50				118,07	101. 21. 48,55	T.
	(f) B. (w.) v. 1479. ....	0. 53,8	53,8	53,1	54,7	53,2	53,0		7,370		291. 1. 27,73	29,636	34,4	33,0	135,32	104. 5. 5,03	T.
Feb. 21	(d) ⊙ N.L. ....	4. 48,3	48,0	47,9	48,9	51,0	47,7	+2,9	10,704		287. 14. 13,08	30,264	41,0	44,0	114,14	100. 17. 28,70	T.
	⊙ S.L. ....	2. 6,6	6,0	7,9	6,9	7,9	5,4		10,704		287. 46. 31,44				116,78	100. 49. 49,70	T.
Feb. 22	(g) ⊙ S.L. ....	0. 6,8	8,4	6,2	9,3	8,1	7,9		10,039		287. 24. 46,30	30,070	44,8	45,7	113,85	100. 28. 1,63	T.
	⊙ N.L. ....	2. 26,9	29,1	28,1	28,2	29,0	28,3				286. 52. 28,50				111,30	99. 55. 41,28	T.
Feb. 23	(d) ⊙ N.L. ....	1. 39,6	39,0	39,8	38,9	40,7	38,7		12,142		286. 30. 34,09	30,340	44,0	46,3	110,46	99. 33. 46,03	T.
	⊙ S.L. ....	3. 52,9	54,0	54,7	52,5	54,7	52,3		12,142		287. 2. 48,37				112,97	100. 6. 2,82	T.
	H. C. 14228. ....	4. 15,1	16,2	16,9	14,2	15,5	15,2				290. 34. 15,93	30,514	38,7	36,2	135,49	103. 37. 52,90	T.
	* R. 7 <sup>h</sup> . 16 <sup>m</sup> . 39 <sup>s</sup> . ....	0. 48,9	49,4	48,2	48,2	50,4	48,8				290. 0. 49,07				132,08	103. 4. 22,63	T.
	* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 39 <sup>s</sup> . ....	1. 12,2	12,4	13,0	12,0	13,4	12,2				289. 36. 12,65				129,66	102. 39. 43,79	T.
Feb. 25	⊙ S.L. ....	4. 2,9	1,2	4,7	1,1	2,5	1,9		10,543		286. 18. 30,59	30,330	46,6	48,4	109,04	99. 21. 41,11	T.
	⊙ N.L. ....	1. 47,2	48,2	50,2	47,6	49,7	46,0		10,543		285. 46. 16,14				106,66	98. 49. 24,28	T.
	B. (w.) v. 990. ....	2. 33,0	34,9	34,0	34,0	33,8	35,0				290. 57. 34,37	30,400	42,6	41,8	135,84	104. 1. 11,69	T.
	B.A.C. 2221. ....	1. 42,1	44,4	43,0	41,9	45,0	41,9		5,875		291. 12. 48,40				137,47	104. 16. 27,35	T.
	(h) B. (w.) v. 1286. ....	...	...	...	...	...	...		13,402		291. 10. 11,41				137,19	104. 13. 50,08	T.
	(i) Hygeia. ....	0. 54,7	53,9	55,2	55,6	55,5	56,4		9,630		262. 55. 42,16	30,430	41,1	39,4	47,63	75. 57. 51,27	T.
	Fortuna. ....	3. 31,0	30,0	31,9	29,3	30,4	32,3		8,250		264. 18. 46,79				50,04	77. 20. 58,31	T.
	(k) Fortuna B. ....	...	...	...	...	...	...		8,152	+1	264. 18. 47,85					77. 20. 59,37	T.
Feb. 27	(l) ⊙ N.L. ....	1. 17,0	19,0	15,9	18,3	16,2	17,4		8,580		285. 1. 26,18	30,288	45,0	45,9	103,82	98. 4. 31,48	T.
	⊙ S.L. ....	3. 31,3	34,9	34,0	33,4	31,4	31,5		8,580		285. 33. 41,84				106,15	98. 36. 49,47	T.
	Zenith Point. ....	1. 3,4	3,8	0,5	5,7	3,1	7,4		9,842		224. 45. 46,52						T.
	(m)(n) Fortuna B. ....	0. 40,7	36,3	38,9	38,1	39,3	40,2		12,407	+1	264. 9. 26,91	30,200	40,0	38,5	49,48	77. 11. 37,87	T.
	(m) Lutetia B. ....	0. 19,1	15,0	16,3	17,4	16,8	19,6		2,935	+1	259. 37. 22,89	30,200	40,0	38,5	41,98	72. 39. 26,35	T.
Feb. 28	(o) ⊙ S.L. ....	1. 30,7	29,0	30,7	32,0	30,6	31,0		10,039		285. 11. 9,32	30,298	45,4	49,4	103,82	98. 14. 14,62	T.
	(p) B. (w.) v. 1361. ....	0. 54,9	53,5	53,1	54,8	55,7	53,3		9,012		290. 15. 54,15	30,468	43,4	41,0	132,06	103. 19. 27,69	T.
	(q) H. C. 13077. ....	2. 10,0	7,9	11,1	10,1	10,0	9,6		4,520		291. 18. 43,41	30,513	40,7	37,5	139,87	104. 22. 24,76	T.
	μ Canis Majoris. ....	3. 3,0	2,1	5,0	4,7	4,7	3,1		9,403		290. 47. 55,66				136,56	103. 51. 33,70	T.
	B. (w.) v. 1757. ....	3. 58,1	55,9	59,1	57,6	58,1	56,9		9,004		290. 53. 57,92				137,20	103. 57. 36,60	T.

ONE REVOLUTION of the MICROMETER = 20".856. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6. ASSUMED CO-LATITUDE = 37°. 47'. 8".00.

Feb. 12, 22<sup>h</sup>—Feb. 13, 4<sup>h</sup>. The Circle was taken from the wall to clean the axis. The positions of Microscopes B and F were altered to diminish their Runs, and the microscope-readings were then adjusted. The distance of the wire-frame from the object-glass was adjusted by the collimating eye-piece. (See Introduction.)

Feb. 13, 9<sup>h</sup>—10<sup>h</sup>. The micrometer-wire was adjusted equatorially by bisections of very small stars.

(a) 'The south-preceding and brighter of two objects.' (b) Negative correction for Runs. (c) This Limb was taken hurriedly. (d) Fringed and unsteady. (e) 'About 6" apart.' (f) Seen only at times: bisected doubtfully. (g) Accidentally on the fixed wire. The coincidence reading was obtained on Feb. 27. (h) 'The south-following of two.' (i) 'Not at all good.' (k) Reduction to wire-reading = +0".052. (l) Boiling motion. (m) Reduction to wire-reading = +0".053. (n) 'The north-preceding and fainter of two.' (o) Assumed to be taken on the fixed wire: the coincidence reading was obtained Feb. 27. Great motion: N.L. hid by cloud. (p) The recorded Circle reading was 1' greater. (q) Observed by mistake for B.A.C. 2221, which follows.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"		r.		"	Inch.	"	"		"	"	"	
Feb. 28	(a) * R. 6 <sup>h</sup> . 57 <sup>m</sup> . 54 <sup>s</sup> .	1. 41,1	38,0	40,0	38,7	41,1	38,0	+2,9	13,404		290. 40. 7,80	30,513	40,7	37,5	135,73	103. 43. 45,01	T.		
	B. (w.) vi. 1827..	...	...	...	...	...	...		9,291		290. 41. 33,58				135,88	103. 45. 10,94	T.		
	B. (w.) vii. 22 ..	...	...	...	...	...	...		7,705		290. 42. 6,66				135,94	103. 45. 44,08	T.		
	* R. 7 <sup>h</sup> . 10 <sup>m</sup> . 3 <sup>s</sup> .	1. 59,8	57,0	59,1	58,9	60,0	57,9				290. 21. 58,97				133,85	103. 25. 34,30	T.		
	* R. 7 <sup>h</sup> . 14 <sup>m</sup> . 27 <sup>s</sup> .	2. 35,0	33,2	36,7	34,0	35,9	33,8		7,850		290. 17. 59,00	30,516	41,4	37,6	133,43	103. 21. 33,91	T.		
	(b) * R. 7 <sup>h</sup> . 19 <sup>m</sup> . 50 <sup>s</sup> .	4. 48,5	45,7	47,9	48,0	49,5	46,3		6,871		289. 50. 32,03				130,67	102. 54. 4,18	T.		
	* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 33 <sup>s</sup> .	...	...	...	...	...	...		16,981	+2	289. 47. 1,04				130,33	102. 50. 32,85	T.		
	(b)(c) Melpomene B...	4. 15,2	12,0	13,9	14,3	14,1	15,0		3,710	+1	260. 46. 3,32	30,534	39,6	36,8	44,43	73. 48. 9,23	T.		
	Hygeia.....	2. 63,1	58,9	63,4	60,5	62,9	63,4		7,487		262. 48. 33,88	30,540	37,3	34,5	48,08	75. 50. 43,44	T.		
	(c) Hygeia B. ....	...	...	...	...	...	...		7,545	+1	262. 48. 31,61					75. 50. 41,17	T.		
	(c) Fortuna B.....	0. 18,9	14,5	17,6	17,2	17,0	19,8		10,241	+1	264. 4. 50,61	30,550	36,4	33,4	50,45	77. 7. 2,54	T.		
Mar. 2	⊙ S.L.....	0. 5,7	5,1	6,1	7,8	5,7	4,1	+2,6	7,697		284. 25. 32,95	30,640	45,4	48,2	102,10	97. 28. 35,81	T.		
	⊙ N.L.....	2. 50,8	51,7	51,8	50,9	53,0	49,5		7,697		283. 53. 18,71				99,95	96. 56. 19,42	T.		
	H. C. 11320.....	4. 11,9	9,6	14,9	9,1	12,1	9,3		8,627		256. 59. 19,30	30,604	41,2	38,7	38,48	70. 1. 18,54	T.		
	B. (w.) v. 1479..	1. 15,8	15,2	16,5	15,3	15,7	16,1		8,559		291. 1. 25,08				138,05	104. 5. 3,89	T.		
	B. (w.) v. 1487..	...	...	...	...	...	...		18,053		290. 58. 7,07				137,70	104. 1. 45,53	T.		
	f <sup>1</sup> Orionis.....	2. 33,3	31,9	35,0	31,7	34,8	30,7		6,850		260. 48. 17,96				44,41	73. 50. 23,13	T.		
	H. C. 11975.....	4. 4,0	1,7	6,9	1,4	5,0	3,0				251. 34. 4,02				30,85	64. 35. 55,63	T.		
	(b) H. C. 12111.....	4. 59,4	56,3	60,2	57,7	60,4	58,0				248. 54. 58,67				27,38	61. 56. 46,81	T.		
	H. C. 12262.....	2. 25,5	21,7	26,0	21,8	24,9	24,1			+1	258. 7. 24,25	30,610	40,7	37,5	40,30	71. 9. 25,31	T.		
	H. C. 12462.....	0. 55,9	53,1	57,9	54,7	58,0	54,0				254. 40. 55,68				35,23	67. 42. 51,67	T.		
	H. C. 12599.....	1. 4,1	2,0	5,5	3,1	5,2	2,3				257. 51. 3,80				39,88	70. 53. 4,44	T.		
	H. C. 12712.....	0. 4,8	1,9	5,9	3,9	5,9	2,3		12,952	+2½	254. 48. 42,09				35,41	67. 50. 38,26	T.		
	H. C. 12724.....	...	...	...	...	...	...		8,248	+2	254. 50. 20,05				35,45	67. 52. 16,26	T.		
	H. C. 12914.....	2. 50,3	48,6	52,8	48,4	52,7	48,2				256. 7. 50,42				37,32	69. 9. 48,50	T.		
	H. C. 12983.....	...	...	...	...	...	...		12,152		256. 6. 44,68				37,32	69. 8. 42,76	T.		
	H. C. 13178.....	2. 44,0	43,3	47,4	42,0	46,2	42,4				256. 27. 44,45			37,0	37,85	69. 29. 43,06	T.		
	* R. 6 <sup>h</sup> . 47 <sup>m</sup> . 39 <sup>s</sup> .	0. 14,4	12,8	13,1	14,7	15,0	14,0				291. 0. 14,02				138,45	104. 3. 53,23	T.		
	(b)(d) * R. 6 <sup>h</sup> . 54 <sup>m</sup> . 16 <sup>s</sup> .	3. 46,8	43,4	44,9	44,7	48,1	45,3		9,030		250. 3. 44,80				29,03	63. 5. 34,59	T.		
	(e) B. (w.) vi. 1827..	1. 32,3	30,1	31,9	31,7	32,9	32,0				290. 41. 31,93				136,74	103. 45. 9,45	T.		
	B. (w.) vii. 22...	...	...	...	...	...	...		7,355		290. 42. 6,26				136,80	103. 45. 43,82	T.		
	H. C. 14022.....	1. 44,2	41,8	45,0	42,4	45,2	42,2				260. 6. 43,62	30,602	38,8	35,8	43,56	73. 8. 47,94	T.		
	* R. 7 <sup>h</sup> . 10 <sup>m</sup> . 3 <sup>s</sup> .	1. 59,1	56,2	59,1	57,0	59,7	57,1				290. 21. 58,20			35,4	134,83	103. 25. 33,79	T.		
	(f) * R. 7 <sup>h</sup> . 14 <sup>m</sup> . 27 <sup>s</sup> .	2. 58,1	57,0	59,3	56,9	58,9	57,0		8,950		290. 17. 59,16				134,43	103. 21. 34,35	T.		
	* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 39 <sup>s</sup> .	1. 14,0	12,4	14,6	13,5	14,0	12,8				289. 36. 13,67	30,596	38,4	35,0	130,33	102. 39. 44,76	T.		
	(b) * R. 7 <sup>h</sup> . 23 <sup>m</sup> . 54 <sup>s</sup> .	4. 25,0	23,2	23,4	25,0	24,9	24,1		9,002	+2	289. 24. 24,04				129,18	102. 27. 53,98	T.		
	(g) * R. 7 <sup>h</sup> . 34 <sup>m</sup> . 3 <sup>s</sup> .	1. 17,5	15,5	19,0	15,9	18,0	16,1				258. 36. 17,12				41,24	71. 38. 19,12	T.		
	(b) Hygeia.....	4. 9,7	6,9	7,9	9,8	9,1	11,2				262. 44. 9,03	30,590	36,5	32,1	48,28	75. 46. 18,07	T.		
	(h) Hygeia B. ....	...	...	...	...	...	...		9,012	+2	262. 44. 7,77					75. 46. 16,81	T.		
Mar. 3	(i) ⊙ N.L.....	0. 35,0	36,0	34,6	36,3	35,8	35,1		9,724		283. 30. 20,50	30,584	44,4	46,8	98,57	96. 33. 19,83	T.		
	⊙ S.L.....	2. 52,7	52,2	54,9	53,0	55,0	52,0		9,724		284. 2. 38,45				100,67	97. 5. 39,88	T.		
	B. (w.) v. 1487..	3. 2,9	2,1	3,7	2,8	3,5	1,4		8,721		290. 58. 8,79	30,580	44,1	43,5	136,22	104. 1. 45,77	T.		
	B. (w.) v. 1500 ..	3. 13,0	11,8	14,6	12,4	14,6	11,3		8,721		291. 3. 19,05				136,76	104. 6. 56,57	T.		
	(k) δ Ursæ Min. SP. R.	1. 10,8	8,2	10,0	12,3	9,7	10,3		8,203		85. 56. 29,32			42,6	52,91	- 3. 24. 26,99	T.		
	(k) δ Ursæ Min. SP. R.	...	...	...	...	...	...		8,171		85. 56. 28,87					- 3. 24. 26,54	T.		
	(k) δ Ursæ Min. SP. R.	...	...	...	...	...	...		8,096		85. 56. 29,59					- 3. 24. 27,26	T.		
	(k)(b) δ Ursæ Min. SP.	4. 45,4	40,0	43,0	42,1	45,0	43,7		8,029		183. 35. 3,41					- 3. 24. 28,74	T.		
	(k) δ Ursæ Min. SP..	...	...	...	...	...	...		8,010		183. 35. 3,62					- 3. 24. 28,53	T.		
	(k) δ Ursæ Min. SP..	...	...	...	...	...	...		7,980		183. 35. 3,94					- 3. 24. 28,21	T.		
	(k) δ Ursæ Min. SP. R.	1. 15,1	12,1	15,0	16,0	15,1	15,0		8,796		85. 56. 29,41					- 3. 24. 27,08	T.		
	(k) δ Ursæ Min. SP..	0. 17,9	12,9	16,1	15,2	16,1	16,2		8,788		183. 35. 3,39					- 3. 24. 28,76	T.		
	H. C. 13004.....	1. 8,9	5,9	8,5	6,9	10,8	6,9				250. 41. 8,08	30,584	43,8	42,0	29,46	63. 42. 58,30	T.		
	(b)(l) * R. 6 <sup>h</sup> . 47 <sup>m</sup> . 39 <sup>s</sup> .	4. 60,0	58,2	59,6	59,1	60,9	58,6		8,150		291. 0. 17,13				136,89	104. 3. 54,78	T.		
	μ Canis Majoris..	2. 50,8	48,8	52,2	48,3	51,7	48,4		8,626	+1½	290. 47. 58,00			41,0	135,87	103. 51. 34,63	T.		
	(m) B. (w.) vi. 1757..	3. 57,6	55,0	59,7	56,1	58,4	56,0		8,925	+1½	290. 53. 58,95				136,51	103. 57. 36,22	T.		
	H. C. 13848.....	1. 7,0	5,3	6,9	6,0	7,9	5,1		8,980		290. 46. 6,89			40,0	135,96	103. 49. 43,61	T.		
	H. C. 14030.....	1. 44,3	41,0	44,1	40,8	46,2	41,9				252. 51. 43,20			39,0	32,56	65. 53. 36,52	T.		

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) 'Precedes the next about 25s.' (b) Negative correction for Runs. (c) Reduction to wire-reading = + 0",054. (d) Observed for H. C. 13564.  
 (e) 'A star of equal Mag. precedes.' (f) 'A very faint star follows.' (g) Observed for H. C. 14969. (h) Reduction to wire-reading = + 0",058.  
 (i) The recorded Circle reading was 1' greater. (k) These observations were considered good. Times of bisection by Molyneux, 6<sup>h</sup>. 12<sup>m</sup>. 40<sup>s</sup>, 13<sup>m</sup>. 54<sup>s</sup>, 15<sup>m</sup>. 18<sup>s</sup>,  
 17<sup>m</sup>. 27<sup>s</sup>, 18<sup>m</sup>. 29<sup>s</sup>, 19<sup>m</sup>. 15<sup>s</sup>, 26<sup>m</sup>. 36<sup>s</sup>, and 29<sup>m</sup>. 11<sup>s</sup>. Molyneux slow, 2<sup>m</sup>. 9<sup>s</sup>, by a Circle transit of μ Canis Majoris on March 3. (l) Bisected doubtfully on  
 account of its faintness. (m) Extremely faint and the observation very doubtful.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refractio.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						Inch.	"			
Mar. 3	H. C. 14072.....	1.44,3	41,0	44,1	40,8	46,2	41,9	+2,6	14,680		252.49.44,74	30,584	43,8	39,0	32,51	65.51.38,01	T.
	(a) B. (w.) VII. 451..	3.10,3	8,8	11,4	9,0	10,2	9,0		8,985		290.8.10,36				132,34	103.11.43,46	T.
	(b) * R. 7 <sup>h</sup> . 19 <sup>m</sup> . 50 <sup>s</sup> .	4.53,5	52,0	53,0	53,0	55,7	51,3		7,019		289.50.34,39	30,588	42,3	38,0	130,88	102.54.6,03	T.
	* R. 7 <sup>h</sup> . 22 <sup>m</sup> . 33 <sup>s</sup> .	...	...	...	...	...	...		17,191		289.47.2,24				130,53	102.50.33,53	T.
	(c)(d) Melpomene B...	2.23,5	20,9	24,7	22,3	24,1	23,3		8,280	+1	260.27.37,48	30,590	41,8	38,3	43,87	73.29.42,11	T.
	Hygeia .....	1.22,2	19,0	22,8	20,9	21,9	22,9		7,194		262.41.59,40	30,598	38,0	34,4	48,00	75.44.8,16	T.
	(d) Hygeia B. ....	...	...	...	...	...	...		7,166	+1	262.41.59,07					75.44.7,83	T.
	(d) Fortuna B. ....	1.25,3	22,0	25,2	22,4	23,6	25,7		7,903	+1	263.51.46,01	30,600		33,6	50,12	76.53.56,89	T.
Mar. 4	B. (w.) v. 1479..	3.22,0	20,9	23,9	21,2	22,8	21,4		14,658	+2½	291.1.24,08	30,760	37,4	35,6	139,66	104.5.4,50	T.
	B. (w.) v. 1500..	...	...	...	...	...	...		9,325	+1½	291.3.15,45				139,87	104.6.56,08	T.
	H. C. 11839....	1.18,2	15,4	18,1	18,0	17,3	19,2				259.1.17,82				42,06	72.3.20,64	T.
	10 Geminorum...	3.42,1	38,0	43,5	38,2	41,9	39,3		9,020		253.18.40,40				33,60	66.20.34,76	T.
	H. C. 12166....	0.12,7	8,1	12,0	11,7	11,0	12,3				259.30.11,32			35,2	42,86	72.32.14,94	T.
	H. C. 12454....	1.57,6	54,0	56,9	55,9	57,1	56,9				259.26.56,57				42,77	72.29.0,10	T.
	H. C. 12573....	0.37,2	32,0	36,5	33,9	38,3	34,5			+1½	248.35.35,63				27,30	61.37.23,69	T.
	H. C. 12712....	3.40,2	37,3	44,0	38,7	41,9	38,8			+2½	254.48.40,85	30,760	37,6	35,0	35,77	67.50.37,38	T.
	H. C. 12724....	...	...	...	...	...	...		4,292	+1½	254.50.18,80				35,81	67.52.15,37	T.
	H. C. 13015....	3.56,8	53,1	59,0	55,0	56,4	56,1				260.33.56,40				44,59	73.36.1,75	T.
	H. C. 13180....	2.11,9	9,6	11,9	11,0	11,1	12,1				259.52.11,45				43,46	72.54.15,67	T.
	(b) B. (w.) VI. 1474.	4.51,8	49,0	51,7	50,9	53,1	50,7			-1½	290.54.51,10				139,13	103.58.30,99	T.
	μ Canis Majoris.	2.56,8	54,9	58,0	55,4	56,9	56,1				290.47.56,60				138,38	103.51.35,74	T.
	H. C. 14228....	3.54,1	53,4	56,2	53,1	54,8	54,0		8,001		290.34.15,44	30,762	37,4	33,4	137,40	103.37.53,60	T.
	(e) * R. 7 <sup>h</sup> . 11 <sup>m</sup> . 19 <sup>s</sup> .	2.34,0	31,7	33,6	31,1	33,2	31,9		8,001	+1	290.22.53,60				136,21	103.26.30,57	T.
	(e) * R. 7 <sup>h</sup> . 11 <sup>m</sup> . 20 <sup>s</sup> .	...	...	...	...	...	...		9,159	+2	290.22.29,33				136,17	103.26.6,26	T.
	* R. 7 <sup>h</sup> . 21 <sup>m</sup> . 39 <sup>s</sup> .	1.21,2	19,7	21,9	21,7	22,2	20,0		9,417		289.36.12,53				131,48	102.39.44,77	T.
	(f) * R. 7 <sup>h</sup> . 23 <sup>m</sup> . 54 <sup>s</sup> . B.	4.30,3	28,8	32,3	28,3	29,9	29,0		9,261	+1	289.24.23,82				130,33	102.27.54,91	T.
	H. C. 15029....	4.36,0	34,7	38,7	33,4	36,2	34,0				252.29.35,90				32,62	65.31.29,28	T.
Mar. 6	(g) ⊙ N.L.....	1.14,9	14,0	14,0	16,4	14,1	15,0		9,433		282.21.5,80	30,454	41,7	44,0	94,41	95.24.0,97	T.
	⊙ S.L.....	3.27,4	28,0	28,7	28,9	27,8	28,1		9,433		282.53.19,42				96,38	95.56.16,56	T.
	Zenith Point....	1.3,4	2,1	2,0	5,7	3,3	5,7		9,793		224.45.47,24						T.
	(b)(f) Melpomene B.	4.43,2	39,7	41,7	43,9	43,0	43,4		7,022	+1	260.10.22,96	30,384	34,9	31,6	43,73	73.12.27,45	T.
	(b) H. C. 16327....	4.43,5	41,4	43,2	42,7	44,9	42,7								41,34	71.41.45,13	T.
	B.A.C. 2810....	3.35,0	33,0	37,0	33,1	35,4	33,9			+2	259.18.35,07				42,35	72.20.38,18	T.
	γ Cancri R.....	3.3,1	3,6	4,9	5,0	3,3	4,0		9,216		14.32.59,74			30,8	35,89	68.0.31,39	T.
	γ Cancri .....	3.39,1	37,0	42,0	36,8	39,8	37,3		9,216		254.58.34,47					68.0.31,12	T.
	B.A.C. 2977....	1.9,1	5,7	9,8	7,9	7,0	9,8		3,999		263.52.52,62				50,10	76.55.3,48	T.
	B. (w.) VIII. 1057.	...	...	...	...	...	...		12,579	+2	263.49.53,82				50,01	76.52.4,59	T.
	(b) Ursæ Majoris R.	4.57,4	56,9	55,7	59,9	57,4	58,7		9,455		41.9.48,18			30,0	3,89	41.23.10,95	T.
	Ursæ Majoris ..	1.56,2	52,4	56,5	53,9	56,9	54,0		9,455	+1½	228.21.45,93					41.23.10,58	T.
	(b)(d) Hygeia B.....	4.51,2	49,9	50,0	53,0	51,7	53,2		5,841	+1	262.35.56,45	30,384	33,4	29,6	47,97	75.38.5,18	T.
	(h) Massilia.....	1.49,3	47,4	50,7	49,9	49,2	49,7		7,042	+1	277.27.30,43	30,354	28,5	25,4	81,62	90.30.12,81	T.
Mar. 9	(i) ⊙ S.L.....	3.7,7	9,8	8,0	10,3	11,4	7,9		8,376		281.43.22,46	30,188	56,0	60,5	88,34	94.46.11,56	T.
	⊙ N.L.....	0.54,5	57,1	52,8	57,9	59,3	54,3		8,376		281.11.9,08				86,56	94.13.56,40	T.
Mar. 10	ξ Geminorum R..	1.5,6	5,0	5,0	7,1	8,0	6,1		7,419		5.36.39,20	30,062	47,0	45,3	48,15	76.57.4,19	T.
	(b) ξ Geminorum...	4.22,0	18,6	19,0	20,9	21,8	21,2		7,419	+1½	263.54.53,57					76.57.2,48	T.
	(b) 51 Geminorum R.	3.32,0	31,0	29,1	32,2	33,4	32,0		11,021		8.57.49,33	30,067	46,4	44,7	42,72	73.35.48,63	T.
	(b)(k) 51 Geminorum ..	4.29,5	24,9	26,9	28,7	28,7	29,1		11,021		260.33.45,77					73.35.49,25	T.
Mar. 11	(l) Bellona B. ....	3.5,9	1,9	6,0	4,5	3,7	4,9		10,085	+2	268.22.41,16	30,052	42,3	40,7	56,85	81.24.58,77	T.
Mar. 13	(m) ⊙ N.L.....	0.10,1	10,8	9,6	13,6	11,9	10,4	+2,4	17,921		279.37.4,94	29,920	55,6	59,7	81,06	92.39.46,19	T.
	⊙ S.L.....	2.23,1	23,9	24,0	25,4	24,9	21,9		17,921		280.9.18,01				82,68	93.12.0,88	T.
	H. C. 14086....	0.58,3	55,6	58,0	57,4	59,6	55,3		8,849		250.21.0,60	29,856	51,4	50,6	27,83	63.22.48,62	T.
	H. C. 14110....	...	...	...	...	...	...		3,952	+1½	250.22.42,90				27,87	63.24.30,96	T.
	(l)(a) B. (w.) VII. 451 B	2.39,1	36,3	37,9	37,7	37,9	34,8		7,041	+2	290.8.16,93				126,14	103.11.43,26	T.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Very faint. (b) Negative correction for Runs. (c) 'A star of Mag. 8.9 north-following close to the Planet.' (d) Reduction to wire-reading = + 0",047. (e) For the R.A. of these stars see the N.P.D. Catalogue. (f) Reduction to wire-reading = + 0",041. (g) Badly defined. (h) 'Bright and alone.' (i) The divisions hardly seen, the Circle and microscopes being covered with moisture. (k) Faint from cloud. (l) Reduction to wire-reading = + 0",061. (m) Ragged and unsteady.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Mar. 13	(a) * R. 7 <sup>h</sup> . 23 <sup>m</sup> . 54 <sup>s</sup> B.	3. 61,9	59,6	62,0	60,9	61,8	57,8	+2,4	7,444	+2	289. 24. 32,03	29,856	51,4	50,6	122,06	102. 27. 54,28	T.		
	(b) Pollux R. ....	1. 3,0	1,3	2,0	5,0	4,8	2,3		9,140		20. 56. 0,23			50,3	25,69	61. 37. 21,27	T.		
	Pollux. ....	0. 44,0	39,1	41,8	41,7	44,9	40,2		9,140	+1 $\frac{1}{2}$	248. 35. 39,26					61. 37. 25,14	T.		
	(c) Bellona B. ....	2. 54,0	51,0	52,0	53,3	53,3	51,5		3,980	+2	268. 4. 36,49	29,820	48,5	46,2	55,19	81. 6. 51,87	T.		
Mar. 15	* R. 7 <sup>h</sup> . 14 <sup>m</sup> . 27 <sup>s</sup> .	3. 5,9	3,0	5,3	4,9	5,2	1,3		8,960		290. 18. 5,35	30,134	49,0	49,6	128,52	103. 21. 34,06	T.		
	(d) Pollux R. ....	1. 21,0	20,0	20,2	23,0	22,9	20,7		10,196		20. 55. 56,46			47,5	26,08	61. 37. 25,45	T.		
	Pollux. ....	1. 5,0	0,3	2,8	3,0	5,3	1,1		10,196	+1 $\frac{1}{2}$	248. 35. 38,24					61. 37. 24,51	T.		
Mar. 16	(e)(f) Melpomene B..	0. 46,2	42,9	43,0	46,7	44,3	44,3		5,359	+1	259. 21. 59,68				41,25	72. 24. 1,12	T.		
	(f)(g)(h) Hygeia B....	4. 15,8	15,0	14,0	17,9	14,4	16,8		5,552	+1	262. 20. 26,56	30,220	45,0	42,1	45,98	75. 22. 32,73	T.		
	(f) Eunomia B. ....	2. 14,9	12,0	14,0	14,7	12,6	12,8		8,118	+1	291. 12. 31,11	30,272	44,4	39,0	137,66	104. 16. 8,96	T.		
	(i) Massilia. ....	0. 26,9	23,6	24,9	27,2	25,4	25,4		7,828		276. 25. 50,04				76,22	89. 28. 26,45	T.		
	(f) Bellona B. ....	2. 16,8	14,0	15,1	17,0	14,4	15,2		7,040	+1	267. 37. 55,63				55,99	80. 40. 11,81	T.		
	B. (w.) XII. 44...	3. 45,3	41,9	44,0	43,6	43,9	42,4				282. 3. 43,82				93,78	95. 6. 37,79	T.		
	* R. 12 <sup>h</sup> . 11 <sup>m</sup> . 10 <sup>s</sup> .	2. 31,0	27,0	30,2	29,3	27,7	27,5		9,025		282. 47. 28,46	30,276	43,8	38,0	96,66	95. 50. 25,31	T.		
	B. (w.) XII. 168..	...	...	...	...	...	...		4,672		282. 48. 59,25				96,75	95. 51. 56,19	T.		
	(g)(k) B. (w.) XII. 278.	4. 39,0	35,8	36,1	39,3	37,4	36,7		10,921		281. 18. 57,29				91,36	94. 21. 48,84	T.		
	(k) B. (w.) XII. 280.	...	...	...	...	...	...		4,041		281. 21. 20,78				91,50	94. 24. 12,47	T.		
	(g) B. (w.) XII. 445.	4. 55,4	51,9	52,2	55,1	54,0	52,1				277. 59. 53,43				80,82	91. 2. 34,44	T.		
	(g) $\chi$ Virginis. ....	4. 36,2	33,2	34,5	36,1	33,9	34,3		12,037		284. 8. 31,33				101,90	97. 11. 33,42	T.		
	(g) B.A.C. 4259. ....	...	...	...	...	...	...		5,948		284. 10. 38,32				102,04	97. 13. 40,55	T.		
	(l) Amphitrite. ....	2. 13,3	9,6	11,8	12,2	11,3	11,4		8,890		286. 47. 14,08	30,290	43,4	36,9	113,78	99. 50. 28,05	T.		
	(f) Amphitrite B. ....	...	...	...	...	...	...		8,812	+1	286. 47. 14,71					99. 50. 28,68	T.		
Mar. 17	(m)(g) $\odot$ S.L. ....	4. 11,8	7,9	8,7	11,9	8,4	9,2		7,501		278. 34. 40,84	30,390	47,0	48,2	81,12	91. 37. 22,15	T.		
	$\odot$ N.L. ....	1. 62,3	59,6	61,7	61,6	60,9	59,0		7,501		278. 2. 32,28				79,56	91. 5. 12,03	T.		
	(n) Polaris R. ....	0. 24,2	23,0	22,3	26,4	22,8	24,1		12,401		81. 4. 11,88	30,372	48,5	49,5	43,53	1. 28. 0,40	T.		
	(n) Polaris R. ....	...	...	...	...	...	...		12,402		81. 4. 12,34					1. 27. 59,94	T.		
	(n) Polaris. ....	2. 28,0	24,0	28,1	27,7	26,0	26,6		9,172		188. 27. 23,39					1. 28. 0,05	T.		
	(n) Polaris. ....	...	...	...	...	...	...		9,177		188. 27. 23,25					1. 27. 59,91	T.		
	(n)(g) Polaris R. ....	4. 51,3	49,8	50,1	53,9	52,0	51,1		10,811		81. 4. 12,58					1. 27. 59,90	T.		
	(n) Polaris R. ....	...	...	...	...	...	...		10,792		81. 4. 11,76					1. 28. 0,52	T.		
	(n) Polaris. ....	2. 23,9	20,0	24,0	22,9	21,3	21,7		9,239		188. 27. 23,56					1. 28. 0,22	T.		
	(n) Polaris. ....	...	...	...	...	...	...		9,281		188. 27. 24,00					1. 28. 0,66	T.		
	* R. 6 <sup>h</sup> . 47 <sup>m</sup> . 39 <sup>s</sup> .	0. 25,7	22,8	24,2	25,1	23,6	22,7		9,200		291. 0. 19,88	30,342	44,5	41,0	136,10	104. 3. 56,17	T.		
	(f) * R. 6 <sup>h</sup> . 47 <sup>m</sup> . 39 <sup>s</sup> B.	...	...	...	...	...	...		9,264		291. 0. 17,56					104. 3. 53,85	T.		
	* R. 7 <sup>h</sup> . 10 <sup>m</sup> . 3 <sup>s</sup> .	2. 5,8	3,0	5,0	4,7	3,9	3,0			+2	290. 22. 4,26	30,344	43,8	40,0	132,43	103. 25. 36,88	T.		
	(o) * R. 7 <sup>h</sup> . 16 <sup>m</sup> . 39 <sup>s</sup> .	0. 54,3	52,0	53,2	53,9	53,9	51,3		8,991		290. 0. 53,36				130,31	103. 4. 23,86	T.		
	Castor R. ....	0. 13,3	12,2	11,0	15,7	11,7	12,8		7,741	-1	24. 45. 38,97			29,5	22,01	57. 47. 38,85	T.		
	Castor. ....	0. 31,0	26,6	30,0	28,2	30,0	26,7		7,741	+1	244. 45. 55,13					57. 47. 37,33	T.		
	Pollux R. ....	0. 45,0	45,0	45,1	48,1	46,8	45,9		8,465		20. 55. 57,21				26,69	61. 37. 25,29	T.		
	Pollux. ....	0. 27,0	22,6	26,3	26,1	27,4	25,0		8,465		248. 35. 36,93					61. 37. 23,81	T.		
	(f) Fortuna B. ....	2. 51,9	48,3	53,0	50,6	49,1	50,1		7,320	+1	263. 3. 24,85	30,320	41,4	37,6	47,85	76. 5. 32,89	T.		
	(f) Eunomia B. ....	2. 21,0	16,0	21,8	18,9	17,0	19,4		5,986	+1	291. 8. 21,09	30,282	38,0	31,6	139,42	104. 12. 0,70	T.		
	(g) Massilia. ....	4. 22,0	16,1	19,3	20,3	17,9	20,7		8,528		276. 19. 29,17				77,15	89. 22. 6,51	T.		
	(f)(g)(p) Bellona B...	3. 47,0	44,9	45,0	46,2	43,5	45,0		7,520	+1	267. 29. 15,19			31,3	56,64	80. 31. 32,02	T.		
Mar. 20	(q) Zenith Point ....	0. 58,4	59,0	57,7	61,7	59,2	60,8		9,563		224. 45. 47,81						T.		
	Zenith Point ....	0. 58,1	60,0	57,1	61,7	59,1	61,2		9,593		224. 45. 47,25						T.		
Mar. 21	(f)(r) Melpomene B..	1. 61,7	59,9	61,0	60,9	60,0	61,0		6,332	+1	259. 2. 55,67	30,398	41,3	37,7	41,43	72. 4. 57,85	T.		
Mar. 23	(s) Hygeia B. ....	3. 20,4	21,0	22,8	21,1	20,9	21,1		7,174		262. 13. 58,50				46,20	75. 16. 5,45	B.		
	(s) Fortuna B. ....	0. 45,0	43,2	45,3	45,9	47,0	45,6		11,524		262. 49. 51,70				47,22	75. 51. 59,67	B.		
	Regulus R. ....	0. 15,1	16,8	16,0	18,0	18,4	17,4		11,419	+2	5. 14. 26,38			41,3	49,66	77. 19. 18,53	B.		
	Regulus. ....	2. 54,5	54,4	56,7	55,2	56,5	56,3		11,419	+2 $\frac{3}{4}$	264. 17. 5,63					77. 19. 16,04	B.		
	(t) * R. 10 <sup>h</sup> . 12 <sup>m</sup> . 12 <sup>s</sup> .	0. 50,6	50,4	50,6	52,1	52,1	51,3				265. 5. 51,25				51,11	78. 8. 3,11	B.		
	B. (w.) X. 299. ....	2. 40,6	40,4	41,3	40,9	42,4	40,4				271. 2. 41,22				62,92	84. 5. 4,89	B.		

ONE REVOLUTION of the MICROMETER = 20", 856. ONE INTERVAL from the middle wire for an Equatorial Star = 16", 6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8", 00.

(a) Reduction to wire reading = + 0", 061. (b) This reflection observation does not agree with that of March 15. (c) 'Very faint: quite alone.'  
 Reduction to wire-reading = + 0", 061. (d) The mercury disturbed by wind. (e) 'One south-preceding about 11', and another of nearly the same N.P.D. following.'  
 (f) Reduction to wire-reading = + 0", 047. (g) Negative correction for Runs. (h) 'Very exact bisection: nothing very near this.'  
 (i) 'Of Mag. 9.10: nothing else in the field.' (k) These were considered to be of equal magnitude. (l) An object south-following was also bisected.  
 (m) Bad definition. (n) 'Good observations.' Times by Molyneux, 0<sup>h</sup>. 57<sup>m</sup>. 57<sup>s</sup>, 59<sup>m</sup>. 11<sup>s</sup>, 61<sup>m</sup>. 27<sup>s</sup>, 62<sup>m</sup>. 13<sup>s</sup>, 66<sup>m</sup>. 56<sup>s</sup>, 69<sup>m</sup>. 6<sup>s</sup>, 73<sup>m</sup>. 28<sup>s</sup>, 74<sup>m</sup>. 35<sup>s</sup>. M. slow on II, 1<sup>m</sup>. 4<sup>s</sup>.  
 (o) The micrometer-reading is the mean of 9", 000 and 8", 982, given by two bisections. (p) 'The north-following of two.' (q) After this the Telescope was accidentally struck and the Zenith Point was taken again. (r) 'The last of several.' (s) Reduction to wire-reading = + 0", 051.  
 (t) Observed for II. C. 20061.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"					Inch.	"	"			
Mar.23	B. (w.) x. 399....	0.13,8	11,5	13,0	14,4	13,5	13,3	+2,4			264.35.13,27	30,398	41,5	37,7	50,19	77.37.24,21	B.
	Eunomia.....	0.38,7	38,1	40,6	39,2	39,5	37,4				290.40.38,97	30,292	42,8	40,3	134,02	103.44.13,74	B.
	(a) Massilia.....	1.55,8	56,5	56,6	56,2	58,3	54,5				275.41.56,47				74,11	88.44.31,33	B.
	(b)(c)(d) Bellona B....	4.35,8	33,4	37,0	36,4	34,6	35,4		7,929		266.39.56,67		40,3		54,02	79.42.11,44	B.
	(c) Calliope B.....	0.27,4	26,6	27,2	26,7	26,6	28,3		13,056		257.19.1,51				38,45	70.21.0,71	B.
	Amphitrite.....	0.36,6	37,2	37,6	38,0	37,6	37,5		9,354		286.30.30,09	30,284	43,2	38,8	111,99	99.33.42,83	B.
Mar.24	(e) Melpomene B....	3.26,0	26,9	28,5	26,7	26,1	27,6		10,021		258.53.5,10	30,231	42,6	39,2	40,82	71.55.6,67	B.
	(e) Hygeia B.....	2.49,8	51,6	52,3	51,7	51,5	50,0		7,454		262.13.22,79	30,239		38,3	46,25	75.15.29,79	B.
	(e) Fortuna B.....	3.36,4	37,4	39,7	36,9	39,0	38,4		10,658		262.48.2,84				47,22	75.50.10,81	B.
	H. C. 18995.....	2.3,5	3,9	4,4	4,3	4,4	4,6				258.22.4,32	30,222	40,9	35,3	40,35	71.24.5,42	B.
	B. (w.) ix. 955....	2.53,6	55,0	56,5	53,8	54,5	54,2				266.27.54,83				54,08	79.30.9,66	B.
	B.A.C. 3398.....	0.21,5	22,0	21,9	23,7	23,2	20,6				267.20.22,18				55,76	80.22.38,69	B.
	B. (w.) ix. 1118..	2.30,2	30,5	31,4	31,3	33,0	30,5				271.2.31,35				63,44	84.4.55,54	B.
	Regulus R.....	0.26,4	30,4	28,4	30,6	31,4	29,1		11,971	+1 1/2	5.14.27,38				50,07	77.19.17,94	B.
	Regulus.....	3.5,6	5,6	8,0	6,3	6,0	7,1		11,971	+2 1/2	264.17.4,93					77.19.15,75	B.
	(e) Eunomia B.....	0.15,5	15,2	17,4	16,4	16,8	16,2		7,691		290.35.42,74	30,200	59,5	33,2	135,11	103.39.18,60	B.
	(f) Massilia.....	0.48,5	47,8	49,3	49,3	49,8	47,8				275.35.48,82				74,72	88.38.24,29	B.
	(e) Bellona B.....	1.27,5	25,7	28,7	26,2	25,7	26,9		6,752		266.32.12,95				54,41	79.34.28,11	B.
	(e) Calliope B.....	3.25,8	24,8	28,3	25,7	26,4	26,8		15,172		257.16.17,01				38,84	70.18.16,60	B.
Mar.27	H. C. 15528....	0.20,5	21,0	20,5	20,3	22,9	18,5	+2,8			255.25.20,65	30,173	45,4	43,6	35,32	68.27.16,60	B.
	B. (w.) vii. 1763..	1.45,4	47,4	45,9	46,7	47,8	44,9				262.11.46,52				45,60	75.13.52,75	B.
	B.A.C. 2737.....	4.23,4	24,9	25,6	24,4	24,7	23,3				261.54.24,80				45,12	74.56.30,55	B.
	(g) Melpomene.....	3.59,6	60,3	61,5	60,2	60,6	60,2		7,633		258.44.29,28				40,15	71.46.30,06	B.
	(e) Hygeia B.....	2.55,6	56,9	56,8	56,6	58,7	54,9		11,397		262.12.6,04	30,185	45,2	43,5	45,63	75.14.12,30	B.
	(h) * R. 9h.12m.13s	3.10,3	10,5	12,0	10,0	11,0	10,4		12,356		262.42.1,01				46,46	75.44.8,10	B.
	(i) * R. 10h.12m.12s	0.50,8	49,7	50,4	51,6	52,2	50,4				265.5.50,92	30,190	43,9	42,2	50,75	78.8.2,30	B.
	B. (w.) x. 299....	2.41,2	40,4	41,5	41,4	42,6	40,5				271.2.41,52				62,47	84.5.4,62	B.
	p Leonis R.....	3.11,2	15,0	14,2	15,3	15,5	14,1		12,114		2.37.9,57				54,08	79.56.39,88	B.
	p Leonis.....	0.27,2	27,6	27,5	28,2	28,1	27,2		12,114	+2 1/2	266.54.22,90					79.56.37,61	B.
	(l) B. (w.) x. 576....	1.37,6	39,0	38,3	37,8	38,4	36,9				273.41.38,15				68,54	86.44.7,32	B.
Mar.28	B. (w.) xi. 657....	1.44,9	44,5	44,5	44,8	47,0	44,4		1,775		275.14.15,86	30,359	47,4	45,0	72,36	88.16.48,85	B.
	Massilia.....								7,953		275.12.7,02				72,26	88.14.39,91	B.
	(m) Bellona B.....	3.31,0	31,3	32,6	32,2	31,8	31,5		10,209		266.3.6,28				52,47	79.5.19,33	B.
	Calliope.....	4.18,6	19,0	20,9	18,6	20,2	19,8		15,864		257.6.56,76				37,87	70.8.55,26	B.
	(n) Amphitrite.....	0.5,4	5,2	4,5	6,6	6,4	3,6		7,708		286.15.32,35	30,341	46,4	43,5	109,96	99.18.42,94	B.
	Zenith Point.....	1.40,3	43,0	38,4	42,9	42,3	43,1		11,607		224.45.47,46						B.
	Zenith Point.....	1.28,5	31,3	25,9	30,4	29,6	30,6		11,026		224.45.47,27						B.
Mar.29	☉ S.L.....	2.1,6	3,2	1,7	2,5	3,0	0,3		10,315		273.51.24,80	30,316	48,8	56,7	67,20	86.54.2,63	B.
	(o) Polaris R.....	0.26,8	26,4	24,1	29,8	29,3	27,3		11,824		81.4.7,39				42,81	1.28.5,17	B.
	(o) Polaris R.....								11,848		81.4.8,66					1.28.3,90	B.
	(o) Polaris R.....								11,978		81.4.8,42					1.28.4,14	B.
	(o) Polaris.....	3.17,0	16,3	18,4	17,1	18,4	16,2		11,978		188.27.28,24					1.28.6,06	B.
	(o) Polaris.....								11,880		188.27.28,03					1.28.5,85	B.
	(o) Polaris.....								11,823		188.27.27,53					1.28.5,35	B.
	(p) Polaris R.....	0.54,2	55,7	52,8	56,1	56,4	54,2		13,950		81.4.10,44					1.28.2,12	B.
	(p) Polaris R.....								13,952		81.4.10,77					1.28.1,79	B.
	(p) Polaris R.....								14,016		81.4.9,83					1.28.2,73	B.
	(p) Polaris.....	4.10,5	10,6	12,3	11,3	11,0	9,9		14,016		188.27.26,74					1.28.4,56	B.
	(p) Polaris.....								14,009		188.27.26,87					1.28.4,69	B.
	(p) Polaris.....								14,013		188.27.26,91					1.28.4,73	B.
	(q) Castor n.f. R....	0.30,0	30,6	28,8	32,6	32,6	30,6		8,652	-2	24.45.37,80	30,287	52,5	50,3	21,48	57.47.39,05	B.
	(q) Castor n.f.....	0.52,6	50,2	50,9	50,3	53,7	49,0		8,905	+2 1/2	244.45.53,78					57.47.35,89	B.
	(q) Castor sp. R....	0.30,0	30,6	28,8	32,6	32,6	30,6		8,815		24.45.34,78				21,48	57.47.42,07	B.
	(q) Castor sp.....	0.52,6	50,2	50,9	50,3	53,7	49,0		8,815	+2 1/2	244.45.35,65					57.47.37,76	B.
	(f) Pollux R.....	1.22,2	23,9	21,7	26,1	25,0	23,3		10,326		20.55.56,17				26,06	61.37.25,26	B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) The Circle reading has been diminished 20' conjecturally. (b) Negative correction for Runs. (c) Reduction to wire-reading = +0",051.  
 (d) 'Quite alone.' (e) Reduction to wire-reading = +0",040. (f) 'Good.' (g) Very faint: a fainter northward was noticed. (h) Observed for Fortuna. (i) See March 23. (k) 'Good: very steady.' (l) Faint from cloud. (m) Very faint. Reduction to wire-reading = +0",030.  
 (n) 'Alone.' (o) Times of bisection by Molyneux, 0h.45m.27s, 46m.20s, 47m.38s, 49m.57s, 51m.25s, and 52m.37s. (p) Times of bisection by Molyneux, 1h.0m.49s, 1m.37s, 2m.38s, 5m.9s, 6m.32s, and 7m.36s. M. fast on H, 46s. (q) The micrometer readings have been diminished 1".



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.			
		A	B	C	D	E	F						Int.	Ext.		"	"	"		"	"	"
		"	"	"	"	"	"						"	"								
Mar.29	Pollux.....	1. 3,5	1,6	2,7	2,5	5,6	2,3	+2,8	10,326	+2 $\frac{1}{2}$	248.35.35,97	30,287	52,5	50,3	26,06	61.37.22,66		B.				
	(a) Melpomene B....	1. 13,2	11,0	10,8	12,9	12,6	13,4		14,140		258.39.24,60	30,274	50,1	49,0	39,71	71.41.24,94		T.				
	(a) Eunomia B.....	4. 27,2	26,0	28,4	25,4	26,6	25,3		7,724		290.9.52,89	30,269	47,4	44,3	129,71	103.13.23,23		B.				
	(a)(b) Bellona B.....	1. 4,9	4,4	4,6	5,0	4,4	4,9		7,724		265.56.30,79				52,19	78.58.43,61		B.				
Mar.30	(c) ☉ N.L.....	3. 49,2	52,3	50,8	49,3	50,1	47,8		16,375	+3	272.56.17,37	30,196	49,6	56,5	64,83	85.58.42,83		B.				
	☉ S.L.....	0. 49,8	53,5	50,6	52,1	52,8	49,3		16,375	+4	273.28.18,85				66,05	86.30.45,53		B.				
	18 Leonis.....	4. 0,1	0,0	2,3	0,1	0,7	0,2				264.29.0,93	30,190	49,6	47,0	49,17	77.31.10,73		B.				
	B. (w.) ix. 846..	...	...	...	...	...	...		10,795		264.28.23,49				49,15	77.30.33,27		B.				
	B. (w.) ix. 941..	4. 17,7	19,0	20,3	17,1	18,5	17,5				268.9.18,75				55,93	81.11.35,31		B.				
	B. (w.) ix. 963..	...	...	...	...	...	...		7,471		268.9.50,64				55,95	81.12.7,22		B.				
	υ Leonis.....	4. 28,3	27,4	30,2	27,2	28,6	28,4				263.49.28,85				48,03	76.51.37,51		B.				
	B. (w.) ix. 1162..	3. 42,3	42,6	43,9	42,3	43,1	40,5				261.58.42,80				44,95	75.0.48,38		B.				
	B. (w.) ix. 1172..	...	...	...	...	...	...		18,579		261.55.23,02				44,86	74.57.28,51		B.				
	A Leonis.....	0. 8,2	7,0	7,7	7,7	8,5	6,8				266.15.7,67				52,33	79.17.20,63		B.				
	B. (w.) x. 81. ...	3. 21,8	21,5	22,7	22,3	21,6	21,4				267.3.22,20				53,83	80.5.36,66		B.				
	H. C. 20080.....	4. 9,5	8,5	10,4	7,7	8,7	8,4				265.9.9,25				50,35	78.11.20,23		B.				
	(a) Eunomia B.....	2. 49,4	49,5	49,6	48,4	50,4	46,6		4,188		290.4.28,98	30,212	48,8	46,0	128,48	103.7.58,09		B.				
	Massilia.....	0. 49,9	49,9	49,4	50,5	51,5	49,2				275.0.50,15				71,29	88.3.22,07		B.				
	(a)(b)(d) Bellona B...	4. 40,8	39,5	39,5	40,5	42,4	39,2		8,239		265.49.55,53				51,71	78.52.7,87		B.				
	(a)(d) Calliope B.....	4. 34,0	33,4	32,2	34,6	35,2	33,9		11,903		257.3.32,68				37,52	70.5.30,83		B.				
	(e) Amphitrite.....	0. 19,6	18,8	17,3	19,0	18,6	17,2		12,871		286.8.57,72	30,208	47,8	43,9	108,90	99.12.7,25		B.				
Mar.31	☉ N.L.....	3. 54,9	57,3	55,8	55,4	57,2	53,6		11,762		272.32.58,47	30,351	48,5	54,4	64,56	85.35.23,66		B.				
	B. (w.) ix. 628..	4. 45,4	45,2	47,3	45,2	45,9	45,2				265.44.46,15	30,300	48,3	44,5	51,86	78.46.58,64		B.				
	B. (w.) ix. 749..	1. 16,7	16,3	15,9	18,1	16,2	16,8				262.46.16,78				46,66	75.48.24,07		B.				
	18 Leonis.....	3. 61,4	59,8	62,2	59,7	60,3	59,8				264.29.0,90				49,60	77.31.11,13		B.				
	B. (w.) ix. 846..	...	...	...	...	...	...		10,831		264.28.22,71				49,58	77.30.32,92		B.				
	26 Leonis.....	2. 58,7	58,2	58,6	59,5	58,5	57,5				261.2.58,78				43,84	74.5.3,25		B.				
	(f) B. (w.) ix. 1162..	3. 42,5	42,5	43,8	42,5	42,7	40,5				261.58.42,77				45,35	75.0.48,75		B.				
	A Leonis.....	0. 6,6	5,5	5,2	3,9	5,4	4,6				266.15.5,22				52,79	79.17.18,64		B.				
	(d)(g) B. (w.) x. 38..	4. 38,4	36,0	36,3	37,2	39,2	36,9			+2 $\frac{1}{2}$	270.4.37,33				60,34	83.6.58,30		B.				
	(h) θ Leonis R.....	2. 35,3	37,6	36,6	37,8	38,1	34,5		10,177		8.47.12,35	30,284	46,2	42,8	43,47	73.46.26,49		B.				
	(h) θ Leonis.....	4. 46,0	44,7	46,6	44,0	45,3	44,2		10,177		260.44.21,03					73.46.25,13		B.				
	(a) Massilia B.....	0. 50,6	49,7	49,6	50,0	50,5	48,5		10,563		274.55.16,68			42,0	71,82	87.57.49,13		B.				
	(a)(i) Bellona B.....	4. 16,9	14,4	15,8	16,4	16,8	14,4		11,004		265.43.33,76				52,07	78.45.46,46		B.				
	(a) Calliope B.....	2. 50,2	48,5	50,5	50,6	49,6	48,8		11,004		257.2.7,55				37,89	70.4.6,07		B.				
	(a)(b) Amphitrite B..	1. 40,2	38,8	38,7	39,4	39,5	36,8		11,936		286.5.37,19	30,261		40,5	109,61	99.8.47,43		B.				
Apr. 1	(k) ☉ N.L.....	1. 42,8	49,1	42,4	44,9	45,3	41,7	+3,1	14,409		272.9.51,74	30,193	50,6	63,0	62,27	85.12.14,51		B.				
	☉ S.L.....	3. 43,7	48,0	46,4	47,1	47,5	42,0		14,409		272.41.53,36				63,45	85.44.17,31		B.				
	B. (w.) x. 499 ...	0. 13,7	13,3	11,3	16,1	13,9	13,6		7,485		264.35.45,27	30,253	52,9	51,3	49,03	77.37.54,80		B.				
	* R. 10 <sup>h</sup> . 28 <sup>m</sup> . 22 <sup>s</sup>	...	...	...	...	...	...		10,072		264.34.51,31				49,01	77.37.0,82		B.				
	(a)(l) Eunomia B.....	1. 20,3	18,4	18,4	18,8	20,3	19,3		3,276		289.53.18,13	30,272	52,4	48,3	127,04	102.56.45,67		B.				
	(m)(a) Massilia B.....	2. 57,5	57,7	58,5	57,5	59,7	55,6		5,884		274.54.2,41				70,81	87.56.33,72		B.				
	(a) Bellona B.....	2. 40,0	40,4	40,4	40,9	42,7	39,1		9,779		265.37.23,98				51,19	78.39.35,67		B.				
Apr. 2	Zenith Point ....	1. 25,8	27,0	23,6	26,7	25,8	25,7		10,842		224.45.47,50							B.				
Apr. 3	☉ S.L.....	1. 11,7	11,4	10,8	12,8	12,6	8,9		10,294		271.55.44,49	30,474	50,5	52,6	63,66	84.58.8,65		B.				
	☉ N.L.....	4. 9,7	9,3	10,8	9,6	10,4	7,2		10,294		271.23.42,94				62,48	84.26.5,92		B.				
	(a) Massilia B.....	1. 19,9	18,6	18,9	20,4	19,2	17,0		14,000		274.39.34,22	30,499	48,3	40,5	71,89	87.42.6,61		B.				
	(a)(n) Bellona B.....	1. 9,4	7,4	8,4	9,3	8,4	7,7		10,165		265.25.43,63				52,05	78.27.56,18		B.				
	(a)(d) Amphitrite B..	4. 59,4	56,6	57,8	57,1	58,5	55,2		8,495		285.55.7,34			40,1	109,77	98.58.17,61		B.				
Apr. 4	(o) ☉ N.L.....	1. 23,4	24,3	22,6	24,2	23,1	22,5		10,578	+2 $\frac{1}{2}$	271.0.51,35	30,440	49,5	54,4	61,37	84.3.13,22		B.				
	☉ S.L.....	3. 19,5	21,2	21,0	20,8	18,9	16,8		10,578	+2 $\frac{1}{2}$	271.32.47,90				62,52	84.35.10,92		B.				
Apr. 5	(p) ☉ N.L.....	3. 2,8	5,6	3,6	4,2	2,1	0,1		9,166	+1 $\frac{1}{2}$	270.38.0,36	30,318	51,1	57,0	60,00	83.40.20,86		B.				
	☉ S.L.....	0. 3,2	4,8	3,3	6,0	6,1	1,1		9,166	+1 $\frac{1}{2}$	271.10.1,07				61,12	84.12.22,69		B.				

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Reduction to wire-reading = + 0",030. (b) 'Good.' (c) Observed doubtfully through dense cloud without a dark glass. (d) Negative correction for Runs. (e) 'Good: pretty bright.' (f) Very faint from thin cloud. (g) The Circle reading has been diminished 50. (h) Too close to the fixed wire. (i) 'Alone.' (k) Extremely Very. (l) Disappearing at times. (m) The N.P.D. is 4' too great, perhaps from a mistake in recording. (n) A brighter object north-following was also bisected: micrometer reading = 15",121. (o) Extraordinary vertical vibration. (p) Waving.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		o' " "	Inch.	o	o	"	o' " "	
Apr. 5	(a)(b)(c) Bellona B. ...	4.48,2	45,2	46,8	48,2	51,3	45,4	+3,1	8,331		265.15.0,83	30,370	48,1	42,4	51,30	78.17.12,91	B.
	(a) Amphitrite B. ...	0.33,2	30,7	33,3	33,2	32,5	30,5		2,036		285.47.56,90	30,366		40,7	108,63	98.51.6,03	B.
Apr. 6	⊙ S.L. ....	3.28,3	30,2	28,7	28,8	28,4	26,6		12,302		270.47.20,00	30,318	51,2	58,7	60,12	83.49.40,62	B.
	⊙ N.L. ....	1.29,2	28,5	28,0	31,1	31,4	27,7		12,302		270.15.20,60				59,01	83.17.40,11	B.
	H. C. 19438. ....	1.54,7	53,3	53,2	55,6	56,0	52,0				261.31.54,33	30,296	52,9	48,7	44,23	74.33.59,06	B.
	H. C. 19442. ....	...	...	...	...	...	...		6,731		261.32.41,65				44,25	74.34.46,40	B.
	(a) Bellona B. ....	4.14,3	11,5	14,7	12,8	13,4	12,2		7,104		265.9.52,50	30,303	50,8	45,3	50,73	78.12.3,73	B.
	Amphitrite. ....	4.18,8	17,4	21,3	18,2	18,6	16,2				285.44.18,87	30,299	49,4	45,6	107,02	98.47.26,39	B.
	(d) ε Virginis R. ....	4.18,3	18,9	20,9	20,2	20,3	17,5		11,502	+1½	4.18.27,55				50,79	78.15.18,74	B.
	ε Virginis. ....	4.4,4	1,7	4,8	3,6	3,2	1,8		11,502	+2¾	265.13.11,72					78.15.23,01	B.
Apr. 7	(e) ⊙ S.L. ....	4.13,3	11,7	14,6	12,3	12,4	10,6	+3,8	7,521		270.24.43,87	30,340	53,3	59,2	59,32	83.27.2,45	B.
	⊙ N.L. ....	2.14,8	14,6	14,5	15,8	14,4	13,7		7,521		269.52.45,77				58,23	82.55.3,26	B.
	(b) Massilia. ....	4.50,3	49,0	47,6	49,9	50,4	47,9		6,866		274.20.33,79				68,06	87.23.1,11	T.
	(b)(f) Bellona. ....	3.61,3	59,0	57,2	61,6	60,7	58,4		5,868		265.5.4,44	30,288	50,4	44,2	50,67	78.7.14,37	B.
	Amphitrite. ....	0.25,9	23,4	23,3	24,5	24,1	22,6		8,482		285.40.34,82				107,02	98.43.41,10	B.
Apr. 8	⊙ S.L. ....	3.12,3	13,0	12,9	12,6	13,4	8,9		11,756		270.2.15,10	30,165	55,8	63,4	57,72	83.4.32,08	B.
	⊙ N.L. ....	1.14,6	16,8	13,5	16,0	17,4	12,4		11,756		269.30.17,79				56,67	82.32.33,72	B.
	B. (w.) x. 993. ....	0.41,6	40,4	39,2	40,9	42,8	39,4				274.55.40,80	30,046	52,9	50,3	70,06	87.58.10,12	B.
	(g) B. (w.) xi. 23. ....	1.49,3	48,0	47,8	47,4	49,6	46,2				268.16.48,28				55,53	81.19.3,07	B.
	Amphitrite. ....	1.49,2	49,0	48,9	47,9	50,0	45,5		8,514		285.36.58,46	30,072	52,8	49,5	104,85	98.40.2,57	B.
Apr. 10	(h) ⊙ S.L. ....	2.62,0	62,2	61,5	62,2	61,3	58,5		10,006	+2	269.17.41,28	30,181	49,8	51,7	57,63	82.19.58,17	B.
	⊙ N.L. ....	1.6,7	8,9	5,4	9,0	5,3	4,3		10,006	+2½	268.45.46,55				56,57	81.48.2,36	B.
	Zenith Point. ....	1.37,3	37,2	35,4	36,7	36,8	35,9		11,303		224.45.48,74						B.
	(b)(i) B. (w.) x. 263 B. ....	4.43,9	41,4	40,5	43,3	42,6	40,4		3,362		270.31.39,11	30,118	49,5	41,7	61,28	83.33.59,65	B.
	B. (w.) x. 396. ....	4.11,8	9,3	9,3	11,7	11,3	9,4				268.19.11,00				56,74	81.21.27,00	B.
	B. (w.) x. 475. ....	0.53,8	51,9	51,7	52,9	53,3	51,4				262.35.52,62				46,36	75.37.58,24	B.
	B. (w.) x. 553. ....	1.16,1	14,6	14,4	15,2	14,4	13,4				262.11.14,83				45,68	75.13.19,77	B.
	34 Sextantis. ....	1.55,4	53,5	54,3	54,0	55,1	52,2			+2	272.36.54,36				65,91	85.39.19,53	B.
	B. (w.) x. 720. ....	3.52,0	50,9	54,1	51,6	51,8	49,4				273.53.52,13				68,94	86.56.20,33	B.
	B. (w.) x. 923. ....	1.50,6	48,8	50,3	50,4	51,6	47,5				274.26.50,10	30,115	48,4	40,4	70,47	87.29.19,83	B.
	B. (w.) x. 1063. ....	2.58,3	56,3	59,2	56,8	56,8	54,6				266.12.57,37				52,85	79.15.9,48	B.
	θ Leonis R. ....	3.27,0	27,0	27,8	27,3	26,6	25,3		12,478		8.47.14,73				43,45	73.46.25,46	B.
	θ Leonis. ....	0.36,7	33,1	33,4	35,3	34,4	33,4		12,478	+2	260.44.22,08					73.46.24,79	B.
	(k) Eunomia. ....	2.11,0	8,0	10,2	8,6	8,9	6,6				289.2.9,15				123,67	102.5.32,08	B.
	B. (w.) xi. 347. ....	0.57,9	55,6	57,3	57,4	57,4	54,4				274.40.56,78				71,05	87.43.27,09	B.
	B. (w.) xi. 445. ....	0.47,0	43,8	45,0	45,8	46,4	43,4		3,656		270.17.36,78	30,114	47,4	38,9	61,13	83.19.57,17	B.
	(l) Massilia. ....	2.9,6	7,7	10,3	8,7	9,1	7,3		6,893		274.7.52,99				69,90	87.10.22,15	B.
	(m)(i) Amphitrite B. ....	3.18,4	16,0	20,0	16,4	15,6	15,4		5,625		285.29.27,31	30,104	44,8	35,5	107,52	98.32.34,09	B.
	(m) Arcturus. ....	1.20,2	18,6	20,1	18,9	19,2	17,8		12,617		12.30.3,86	30,090	42,5	33,7	38,29	70.3.31,17	B.
	Arcturus. ....	2.46,6	44,0	46,0	45,2	43,9	44,4		12,617	+2	257.1.30,15					70.3.27,70	B.
	B. (w.) xiv. 335. ....	1.10,0	5,3	8,6	7,6	6,1	5,1				289.11.7,25				126,16	102.14.32,67	B.
	Hebe. ....	2.6,5	3,2	5,5	4,4	3,6	3,7		9,363		269.6.57,18			33,7	59,26	82.9.15,70	B.
Apr. 11	⊙ N.L. ....	4.5,8	3,0	7,6	4,4	4,5	2,4		10,204		268.23.40,02	30,126	50,6	57,8	55,06	81.25.54,34	B.
	⊙ S.L. ....	1.4,6	3,2	5,1	5,6	5,3	0,9		10,204		268.55.39,14				56,09	81.57.54,49	B.
	B. (w.) x. 263. ....	1.41,6	39,9	40,4	40,4	40,5	39,3		9,033	+2	270.31.39,93	30,246	48,2	40,7	61,66	83.34.0,85	B.
	B. (w.) x. 446. ....	2.36,6	35,5	35,5	35,3	36,7	34,3				269.7.35,98				58,72	82.9.53,96	B.
	B. (w.) x. 512. ....	4.47,4	46,2	48,0	47,2	46,9	45,9				262.9.47,53				45,93	75.11.52,72	B.
	B. (w.) x. 580. ....	2.48,8	47,0	48,5	47,7	47,8	46,6				266.22.48,08				53,35	79.25.0,69	B.
	35 Sextantis sp. ....	1.54,0	52,0	53,9	53,6	53,3	50,5		8,822		271.26.56,83				63,67	84.29.19,76	B.
	35 Sextantis nf. ....	...	...	...	...	...	...				271.26.53,12				63,67	84.29.16,05	B.
	B. (w.) x. 720. ....	3.53,3	52,0	54,9	52,6	52,7	51,4				273.53.53,30				69,37	86.56.21,93	B.
	B. (w.) x. 798. ....	0.58,4	56,3	57,0	57,7	57,2	56,2				271.10.57,25				63,09	84.13.19,60	B.
	(b) 56 Leonis. ....	4.54,4	52,3	51,5	53,9	52,7	51,4				269.59.52,68				60,54	83.2.12,48	B.
	(b) B. (w.) x. 945. ....	4.55,0	53,0	53,2	55,2	54,8	52,2				270.4.53,88				60,70	83.7.13,84	B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°.47'.8",00.

(a) Reduction to wire-reading = + 0",030. (b) Negative correction for Runs. (c) 'The only object visible.' The pointer reading was at first set down 265°.10', and then diminished 5'. (d) The mercury unsteady. (e) Clouded: observed without a dark glass. (f) The recorded micrometer reading was 1' greater. (g) Cloud. (h) Very unsteady. Too close to the fixed wire. (i) Reduction to wire-reading = + 0",022. (k) An object of 30' less N.P.D. was also bisected. (l) Faint from moonlight. (m) 'Good.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Apr.11	(a) c Leonis .....	4. 55,0	53,0	53,2	55,2	54,8	52,2	+3,8	9,891		270. 4. 35,30	30,246	48,2	40,7	60,70	83. 6. 55,26		B.	
	(b) B. (w.) x. 1023..	2. 56,0	54,6	55,9	55,7	55,1	53,6				270. 22. 55,52				61,35	83. 25. 16,13		B.	
	B. (w.) x. 1102...	1. 54,3	52,5	54,1	53,9	52,8	51,1				272. 56. 53,35				67,10	85. 59. 19,71		B.	
	(c) Eunomia B.....	0. 41,4	37,0	37,8	39,9	38,6	36,0		6,662		288. 56. 26,83	30,244	46,5	33,7	124,12	101. 59. 50,21		B.	
	(a) Massilia.....	4. 13,2	10,4	11,4	13,1	11,4	10,3		9,676		274. 3. 57,43				70,07	87. 6. 26,76		B.	
	Amphitrite.....	0. 17,5	15,0	16,3	16,4	15,0	14,2		7,594		285. 25. 45,09	30,267	45,5	37,0	107,49	98. 28. 51,84		B.	
Apr.12	(a) ☉ S.L.....	4. 17,0	16,5	16,4	18,3	16,4	14,7		10,823		268. 33. 38,45	30,351	48,2	54,4	56,18	81. 35. 53,89		B.	
	☉ N.L.....	2. 23,6	21,6	22,5	21,3	21,4	19,8		10,823		268. 1. 43,98				55,14	81. 3. 58,38		B.	
	B. (w.) ix. 263...	3. 21,4	20,0	21,8	20,2	20,1	19,6				264. 23. 20,93	30,372	49,4	46,8	49,32	77. 25. 29,51		B.	
	B.A.C. 3209.....	0. 12,4	10,7	9,7	12,4	11,9	10,1				259. 45. 11,22				41,70	72. 47. 12,18		B.	
	H. C. 18680.....	3. 56,0	54,5	56,3	55,0	56,2	54,2				261. 3. 55,87				43,76	74. 5. 58,89		B.	
	B. (w.) ix. 564...	1. 22,4	21,3	20,3	22,5	21,4	20,6				265. 51. 21,58				51,91	78. 53. 32,78		B.	
	B. (w.) ix. 692..	4. 54,2	52,6	51,3	52,8	54,2	51,0				267. 49. 53,30				55,66	80. 52. 8,22		B.	
	ψ Leonis. ....	1. 39,3	38,8	37,5	39,0	38,9	38,2				262. 16. 38,83				45,73	75. 18. 43,82		B.	
	B. (w.) ix. 955...	2. 56,5	56,0	55,8	55,4	55,5	54,2				266. 27. 55,93				53,06	79. 30. 8,25		B.	
	ν Leonis .....	4. 30,9	30,0	30,6	29,7	29,4	29,9				263. 49. 30,65				48,34	76. 51. 38,25		B.	
	B.A.C. 3430.....	1. 47,7	47,0	45,9	47,7	47,6	45,1				268. 1. 47,07				56,05	81. 4. 2,38		B.	
	Eunomia. ....	3. 61,0	60,3	60,7	59,9	59,8	58,2		3,868		288. 50. 47,51	30,367	46,8	41,7	123,33	101. 54. 10,10		B.	
	Apr.13	☉ N.L.....	1. 9,8	10,4	7,4	11,7	6,7	8,3		12,533		267. 39. 55,51	30,350	49,6	58,4	54,01	80. 42. 8,78		B.
☉ S.L.....		3. 2,6	5,0	2,1	5,4	3,4	1,9		12,533		268. 11. 50,09				55,02	81. 14. 4,37		B.	
B. (w.) x. 993...		0. 42,0	42,0	39,6	43,3	42,7	40,8				274. 55. 41,82	30,269	46,2	40,6	72,01	87. 58. 13,09		B.	
B. (w.) x. 1075..		2. 43,9	44,8	43,6	45,4	45,2	42,7				265. 57. 44,62				52,63	78. 59. 56,51		B.	
B. (w.) xi. 52...		1. 58,9	58,5	57,2	59,2	59,2	57,3				275. 31. 58,63				73,57	88. 34. 31,46		B.	
(a) B. (w.) xi. 149 ..		4. 47,4	46,7	44,6	48,9	49,3	46,8				269. 29. 47,25				59,55	82. 32. 6,06		B.	
(c) Eunomia B.....		0. 22,1	20,6	19,7	21,1	21,4	18,9		9,466		288. 45. 10,50				122,72	101. 48. 32,48		B.	
(d) B. (w.) xi. 314 ..		1. 6,8	6,3	5,9	8,2	6,4	5,1				267. 31. 6,58				55,58	80. 33. 21,42		B.	
B.A.C. 3892.....		...	...	...	...	...	...		12,093		267. 30. 2,07				55,54	80. 32. 16,87		B.	
(e) Massilia.....		1. 48,9	47,6	48,8	48,3	49,2	46,5		9,333		273. 56. 41,50			38,8	69,82	86. 59. 10,58		B.	
B. (w.) xi. 592 ..		1. 49,6	48,5	48,8	49,7	49,7	48,3				275. 11. 49,33				72,97	88. 14. 21,56		B.	
B. (w.) xi. 597..		...	...	...	...	...	...		16,323		275. 9. 16,60				72,86	88. 11. 48,72		B.	
Bellona .....		0. 14,6	12,4	13,2	14,7	13,3	13,3		6,749		264. 41. 0,11				50,49	77. 43. 9,86		B.	
(f) Amphitrite.....	2. 43,3	41,6	44,0	43,1	42,7	41,1		7,046		285. 18. 23,73	30,250		37,0	106,90	98. 21. 29,89		B.		
Apr.15	(a) H. C. 21140.....	4. 54,0	52,5	51,4	53,9	54,2	51,8	+4,4			270. 29. 52,05	30,026	47,7	40,1	61,23	83. 32. 12,92		B.	
	(a) B. (w.) x. 1078 ..	4. 29,3	28,9	27,6	30,5	29,4	28,4				268. 39. 28,93				57,43	81. 41. 45,10		B.	
	(g) B. (w.) xi. 52....	1. 60,5	59,6	59,2	59,4	60,5	58,7				275. 31. 59,95				73,06	88. 34. 31,75		B.	
	B. (w.) xi. 142 ..	3. 58,7	56,0	58,1	57,5	57,3	55,4				277. 13. 57,75				77,63	90. 16. 34,12		B.	
	(g) Eunomia .....	3. 24,0	22,9	24,2	23,3	23,1	21,7		7,506		288. 33. 54,86	30,020	47,3	39,5	120,99	101. 37. 14,59		B.	
	B. (w.) xi. 592 ..	1. 53,6	53,0	52,4	53,6	53,3	50,7				275. 11. 53,05				72,27	88. 14. 24,06		B.	
	(a)(h)(c) Calliope B...	4. 21,9	19,2	19,2	22,6	21,4	21,0		4,126		257. 6. 1,97				37,85	70. 7. 58,56		B.	
	(a) γ Comæ R.....	4. 18,4	17,0	14,6	20,0	17,2	16,8		12,355		21. 38. 7,26	30,026		38,5	25,60	60. 55. 15,60		B.	
	(a) γ Comæ.....	4. 35,4	33,6	33,4	33,5	35,2	31,7		12,355	+2	247. 53. 24,10					60. 55. 8,44		B.	
	β Canum Venat. R.	3. 8,3	9,2	6,8	8,6	8,1	7,5		11,702	+½	34. 42. 12,17				10,64	47. 50. 55,73		B.	
	β Canum Venat.	0. 19,5	16,5	16,7	17,2	17,8	16,4		11,702	+2	234. 49. 21,59					47. 50. 50,97		B.	
	Amphitrite.....	0. 61,4	61,0	60,5	60,7	61,6	59,6				285. 11. 0,95			37,0	105,58	98. 14. 5,27		B.	
	(c) Amphitrite B. ...	...	...	...	...	...	...		9,092		285. 10. 58,57				105,57	98. 14. 2,88		B.	
Hebe.....	3. 6,4	5,9	6,6	6,4	5,3	5,6		4,538		268. 29. 39,54	30,029	44,2	35,8	57,62	81. 31. 55,90		B.		
Apr.17	(i) ☉ N.L.....	0. 15,8	14,7	14,1	14,5	15,3	12,8		11,056		266. 14. 31,69	30,231	50,5	56,3	51,40	79. 16. 41,83		B.	
	(c) Amphitrite B. ...	2. 57,8	57,5	57,3	58,6	56,9	56,5		6,886		285. 3. 41,50	30,223	44,2	36,5	105,84	98. 6. 46,08		B.	
	(k) Polaris R.....	0. 15,2	13,3	11,9	15,2	14,4	13,6		12,305		81. 4. 3,93	30,126	50,0	61,4	42,14	1. 28. 11,19		B.	
	(k) Polaris R.....	...	...	...	...	...	...		12,321		81. 4. 3,99					1. 28. 11,13		B.	
	(k) Polaris R.....	...	...	...	...	...	...		12,316		81. 4. 4,38					1. 28. 10,74		B.	
	(k) Polaris R.....	...	...	...	...	...	...		12,313		81. 4. 4,64					1. 28. 10,48		B.	
	(k) Polaris.....	3. 45,4	44,5	45,6	44,6	46,8	42,3		12,313		188. 27. 36,34					1. 28. 12,94		B.	
	(k) Polaris.....	...	...	...	...	...	...		12,396		188. 27. 34,59					1. 28. 11,19		B.	
	(k) Polaris.....	...	...	...	...	...	...		12,406		188. 27. 34,43					1. 28. 11,03		B.	
	(k) Polaris.....	...	...	...	...	...	...		12,414		188. 27. 34,88					1. 28. 11,48		B.	

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Negative correction for Runs. (b) 'One preceding northward,' viz. B. (w.) x. 1013. (c) Reduction to wire-reading = + 0",022. (d) 'H. C. 21755 was not seen.' (e) 'Mag. 10.11.' (f) Thin cloud, and the observation doubtful. (g) Very faint. (h) 'The only object in the field.' (i) 'One of the shutters intercepting.' (j) Tremulous. Times by Molyneux, 1h. 0m. 11s, 1m. 6s, 1m. 57s, 2m. 41s, 4m. 10s, 4m. 52s, 5m. 49s, and 8m. 28s. M. fast on II. 10s.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Apr.18	⊙ S.L.....	3.43,8	43,6	42,1	45,4	40,9	43,3	+4,4	4,825		266.25.10,80	30,118	50,5	62,3	50,91	79.27.20,45	B
	⊙ N.L.....	1.51,1	51,1	49,0	53,9	50,2	51,1		4,825		265.53.18,40				49,97	78.55.27,11	B
	(a) Massilia B.....	0.28,0	27,4	25,6	27,6	27,5	26,1		6,000		273.41.29,21				67,44	86.43.55,39	B
	(b) Amphitrite.....	4.3,9	2,4	3,4	2,7	2,7	1,8		5,983		285.0.6,35	30,049	48,5	44,7	103,21	98.3.8,30	B
	(c) ζ Virginis R....	4.11,3	10,7	13,3	11,9	13,2	10,2		11,931	+3	352.43.11,25	30,032	49,4	47,4	75,32	89.51.1,33	B
	ν Bootis R.....	0.46,4	47,3	44,9	46,9	48,9	44,4		11,338		189.4.57,82				42,25	73.28.41,69	B
	ν Bootis.....	2.27,9	24,5	26,2	26,0	28,1	23,2		11,338	+2	260.26.37,74					73.28.38,75	B
	η Bootis R.....	3.5,4	7,0	5,6	5,9	6,7	5,0		14,080	+1	11.41.20,38				38,32	70.52.15,20	B
	η Bootis.....	1.61,8	60,2	60,6	60,7	62,3	59,4		14,080	+4	257.50.16,02					70.52.13,08	B
Apr.19	ε Leonis R.....	1.6,4	4,9	3,5	6,8	6,2	5,0		11,696		17.0.9,40	29,906	56,1	55,8	30,32	65.33.18,18	B
	ε Leonis.....	2.22,2	22,4	19,9	20,6	23,4	20,2		11,696	+1	252.31.25,64					65.33.14,70	B
	H. C. 22945.....	3.21,3	19,6	19,7	20,4	20,6	19,2				277.28.20,62	29,893	52,3	47,3	76,80	90.30.56,16	B
	(d) B. (w.) XII. 181..	3.39,3	38,5	37,2	38,0	39,5	37,4				281.53.38,85				90,45	94.56.28,04	B
	(d) H. C. 23179.....	3.49,2	49,2	47,4	47,9	49,6	47,5				281.43.49,02				89,88	94.46.37,64	B
	B. (w.) XII. 361..	0.26,4	24,9	24,8	26,3	26,8	25,6				280.15.25,87				85,05	93.18.9,66	B
	B. (w.) XII. 445..	4.57,8	56,0	53,9	57,4	57,8	54,3				277.59.56,93				78,28	91.2.33,95	B
	(e) χ Virginis.....	3.37,4	36,2	36,3	34,9	36,7	34,8				284.8.36,58				98,69	97.11.34,01	B
	(f) Amphitrite B....	0.4,6	2,6	2,6	3,3	4,2	1,5		4,556		284.56.35,31				101,89	97.59.35,94	B
(g) Hebe.....	1.32,3	30,9	30,6	31,3	31,4	30,6		6,116		268.2.31,55	29,859	49,2	42,8	55,58	81.4.45,87	B	
Apr.20	(h) ⊙ S.L.....	3.25,5	29,5	22,5	27,9	31,4	24,9		8,167		265.43.44,82	29,711	56,3	71,4	48,15	78.45.51,71	B
	⊙ N.L.....	1.32,8	37,0	28,4	35,1	37,2	31,0		8,167		265.11.51,19				47,26	78.13.57,19	B
	Zenith Point....	1.24,0	23,3	22,3	24,0	21,9	23,6		10,636		224.45.49,26						B
Apr.24	Zenith Point....	0.50,8	51,5	48,9	51,7	50,6	49,7	+4,2	9,051		224.45.49,59						B
	(f) Eunomia B.....	4.20,2	16,0	20,3	18,4	16,2	16,2		4,671		287.45.48,24	30,395	43,0	34,5	119,57	100.49.6,22	B
	H. C. 21626.....	4.14,6	11,5	15,3	12,7	10,4	11,2			+3	273.44.13,28				70,23	86.46.41,92	B
	(i) B. (w.) XI. 299..	4.17,8	14,7	19,5	17,0	13,9	15,3				267.14.16,97				55,97	80.16.31,35	B
	B. (w.) XI. 369..	2.6,4	2,5	5,0	4,8	2,4	2,8			+2	274.57.4,30				73,30	87.59.36,01	B
	(f) Massilia B.....	2.63,2	60,9	63,3	61,4	59,3	59,8		6,290		273.28.57,62	30,395		34,2	69,65	86.31.25,68	B
(f)(k) Bellona B.....	3.17,0	12,5	17,6	15,4	12,4	16,0		8,967		264.18.15,79				50,51	77.20.24,71	B	
May 2	(l) χ Leonis.....	0.19,7	17,7	18,8	20,7	19,5	19,0	0,0			268.50.19,23	29,336	48,2	45,3	55,86	81.52.34,81	C
	(m) ο Virginis.....	0.11,7	10,0	10,6	12,3	12,6	9,8				267.25.11,17	29,340	47,9	44,6	53,25	80.27.24,14	C
	ε Virginis.....	3.13,4	12,4	13,3	12,4	13,8	11,8				265.13.12,85				49,42	78.15.21,99	C
	(n) Polaris SP.....	1.10,6	7,8	7,0	9,5	9,6	9,4				185.31.8,74				47,34	-1.28.18,88	C
	Spica.....	0.49,5	47,9	48,8	49,6	50,5	48,4				287.20.49,12	29,350	46,8	42,5	111,56	100.24.0,40	C
	(o) Arcturus.....	1.29,2	29,9	29,0	29,5	30,7	30,6		8,960		257.1.30,65	29,358	46,0	42,7	36,67	70.3.27,04	C
	ε Bootis R.....	1.6,0	5,9	5,5	6,9	8,6	3,3		12,753	-2	20.14.47,45				26,50	62.18.35,33	C
	ε Bootis.....	3.8,7	6,5	7,9	8,0	8,3	4,8		12,753	+2	249.16.49,41					62.18.35,63	C
	β Bootis.....	0.28,6	26,0	26,0	27,4	30,3	27,2				236.0.27,58	29,362	45,9	42,1	11,57	49.1.58,87	C
	ι Draconis R....	3.12,2	11,9	12,5	11,0	15,3	9,0		14,014	-1	52.1.27,16				7,41	30.31.21,71	C
	(p) ι Draconis .....	0.32,9	30,4	31,4	31,1	33,3	29,8		10,038	+2	217.30.10,85					30.31.23,16	C
	(q) α Serpentis.....	4.35,0	32,9	34,5	33,6	33,5	33,5				270.4.33,83	29,358		41,8	58,79	83.6.52,34	C
May 3	Zenith Point....	1.23,0	26,4	22,4	25,8	26,9	24,3		10,751		224.45.48,28						C
	(r) Polaris SP.....	1.12,3	8,1	9,9	10,9	12,3	9,8				185.31.10,34	29,486	49,5	46,2	47,29	-1.28.17,23	C
	Spica.....	0.50,6	46,2	49,4	49,1	51,9	47,4				287.20.49,10				111,22	100.24.0,04	C
	(s) η Ursæ Majoris R	0.29,2	28,0	27,0	30,0	32,0	28,3		8,830	+1	42.35.32,59				2,20	39.57.25,89	C
	η Ursæ Majoris..	0.57,9	52,6	55,3	54,6	57,8	53,6		8,830	+2	226.55.59,57					39.57.21,49	C
	Arcturus.....	1.30,5	26,6	29,5	30,0	31,2	30,4				257.1.29,70	29,479	47,9	44,5	36,68	70.3.26,10	C
	ε Bootis.....	1.48,6	43,8	46,7	46,6	50,3	44,1				249.16.46,68			44,0	26,54	62.18.32,94	C
	β Ursæ Minoris..	3.59,0	56,8	59,8	57,6	58,8	56,0				202.13.58,00				24,14	15.14.53,58	C
	(t) Polaris.....	2.40,0	36,1	40,0	38,8	41,0	37,5				188.27.39,10	29,568	49,6	55,5	41,86	1.28.16,96	C
May 4	⊙ S.L... ..	2.22,7	21,1	22,7	22,0	24,2	21,0	+3,3	10,714	-1	261.16.46,63	29,570		57,3	42,03	74.18.48,10	C
	⊙ N.L.....	0.33,0	31,9	30,4	35,0	34,6	30,8		10,714	+1	260.44.57,18		50,5		41,22	73.46.57,84	C
	Zenith Point....	1.32,4	32,0	30,0	35,6	35,1	33,4		11,143		224.45.48,56						C

ONE REVOLUTION of the MICROMETER = 20".856. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6. ASSUMED CO-LATITUDE = 37°.47'.8".00.

(a) Reduction to wire-reading = + 0".022. (b) 'Good.' (c) Not seen in the direct observation. (d) Very faint. (e) Blazing. (f) Reduction to wire-reading = + 0".025. (g) 'The south-following of two.' This remark does not agree with that of the Transit observer, but the object is the Planet. (h) Great motion. The shutters out of repair and the Sun shining on the Instrument: the Microscope readings appear to be irregular. (i) 'The north-following of two.' (k) The Transit observer took a following brighter object, but noticed this. (l) The observations marked with the Italic C were taken by Mr Criswick. (m) The Circle reading has been diminished 10". (n) Time by Molyneux, 13<sup>h</sup>.6<sup>m</sup>.20<sup>s</sup>. M. slow on H, 20<sup>s</sup>. (o) The bisection made inadvertently with the micrometer. (p) On the fixed wire: the coincidence reading was taken on May 3. (q) The recorded reading was 5' greater. (r) Time by Molyneux, 13<sup>h</sup>.6<sup>m</sup>.7<sup>s</sup>. M. slow on H, 20<sup>s</sup>.5. (s) Indefinite. (t) Time by Molyneux, 1<sup>h</sup>.2<sup>m</sup>.8<sup>s</sup>. M. slow on H, 23<sup>s</sup>.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
May 4	$\rho$ Leonis.....	4. 25,6	24,6	25,7	26,2	26,4	24,3	+3,3			266. 54. 25,95	29,616	51,0	48,0	52,42	79. 56. 37,81	C.
	(a) $\alpha$ Ursæ Majoris R.	1. 25,0	22,6	....	....	25,9	23,1	+2,9	12,166		55. 5. 18,32				10,56	27. 27. 27,88	C.
	$\alpha$ Ursæ Majoris...	2. 27,4	23,8	25,1	23,0	27,3	22,6	+3,3	12,166	+2	214. 26. 20,25					27. 27. 29,13	C.
	$\delta$ Crateris.....	0. 59,5	58,0	59,6	59,0	60,1	57,0				290. 55. 58,98				130,49	103. 59. 28,91	C.
	(b)(c) Amphitrite B...	3. 8,8	6,0	9,5	9,0	9,8	5,4		89,000	+1 $\frac{1}{2}$	284. 11. 36,41	29,626	49,8	45,5	98,37	97. 14. 34,22	C.
	$\eta$ Ursæ Majoris..	1. 5,8	1,0	3,3	3,6	5,5	2,5		9,410		226. 55. 55,18	29,604	48,6	44,4	2,21	39. 57. 16,83	C.
	(d) $\gamma$ Bootis R.....	0. 56,3	55,0	52,7	56,4	57,5	54,3		11,523	-1	31. 30. 2,73	29,598	48,0	43,7	13,78	51. 3. 7,61	C.
	$\gamma$ Bootis.....	2. 27,5	24,0	25,9	24,5	27,6	24,8		11,523	+2	238. 1. 33,84					51. 3. 7,21	C.
	$\epsilon$ Bootis.....	1. 48,8	45,5	47,6	47,1	49,4	45,1				249. 16. 47,45				26,66	62. 18. 33,55	C.
	$\delta$ Libræ.....	2. 24,0	23,0	22,4	23,0	25,3	22,1		16,800	+1 $\frac{1}{2}$	292. 19. 40,80				140,63	105. 23. 20,87	C.
	$\alpha^2$ Libræ.....	....	....	....	....	....	....				292. 22. 23,57				140,95	105. 26. 3,96	C.
	(c) Polaris.....	2. 38,8	36,0	38,6	39,1	40,5	36,1				188. 27. 38,50	29,636	50,3	54,6	42,03	1. 28. 15,91	C.
May 5	$\odot$ N.L.....	4. 39,4	38,8	40,1	38,4	42,0	37,0		14,524	-1	260. 27. 44,43	29,642	51,8	58,0	40,84	73. 29. 44,71	C.
	$\odot$ S.L.....	1. 22,9	21,8	20,9	23,4	24,4	20,5		14,524	+ $\frac{1}{2}$	260. 59. 27,37				41,64	74. 1. 28,45	C.
	Regulus.....	2. 8,6	7,6	6,9	7,3	9,5	7,0				264. 17. 8,05	29,610	51,9	48,3	47,76	77. 19. 15,25	C.
	$\alpha$ Ursæ Majoris M.	2. 18,4	16,5	15,6	14,5	18,2	12,6		11,772	+2	214. 26. 19,56	29,644		44,0	10,66	27. 27. 28,34	C.
	$\beta$ Leonis R.....	2. 18,0	20,0	18,4	17,6	21,5	16,3		10,075	-2	7. 56. 56,29	29,630	49,6	43,0	43,84	74. 36. 44,11	C.
	$\beta$ Leonis.....	0. 1,9	1,5	0,1	1,8	2,4	0,3		10,075	+2	261. 34. 39,08					74. 36. 42,36	C.
	$\sigma$ Virginis.....	0. 10,7	5,3	9,5	9,5	10,8	6,5				267. 25. 8,73				53,95	80. 27. 22,12	C.
	$\delta$ Ursæ Majoris R.	4. 16,9	18,2	17,0	18,2	20,5	19,0		10,900	-1	50. 23. 38,90	29,610	48,5	42,0	5,79	32. 9. 11,87	C.
	$\delta$ Ursæ Majoris..	3. 37,4	33,0	37,0	35,6	39,0	36,4		10,900	+1	219. 7. 57,41					32. 9. 11,06	C.
	(c) Amphitrite B...	3. 38,8	35,2	40,0	38,4	39,9	37,3		7,040	+2	284. 9. 18,93				98,88	97. 12. 17,25	C.
	$\epsilon$ Ursæ Majoris..	3. 29,0	25,2	28,4	27,4	29,0	24,8				220. 13. 27,68				4,66	33. 14. 42,46	C.
	(f) Polaris SP.....	1. 13,5	10,9	12,0	13,8	15,2	11,1				185. 31. 11,62	29,608	46,9	40,7	48,03	1. 28. 16,97	C.
	$\zeta$ Virginis.....	3. 22,8	20,9	25,2	22,0	25,7	23,5				276. 48. 23,72				75,30	89. 50. 58,46	C.
	(c) Hebe B.....	4. 54,8	51,9	55,5	52,0	54,4	51,9		8,819	+2 $\frac{1}{3}$	266. 44. 57,36	29,599	45,8	41,3	52,83	79. 47. 9,63	C.
	(g) $\gamma$ Bootis R.....	1. 28,8	28,5	28,0	28,4	30,7	25,1		13,045	-1 $\frac{1}{2}$	31. 30. 3,79			40,3	13,88	51. 3. 6,65	C.
	$\gamma$ Bootis.....	2. 59,9	56,2	59,4	57,5	59,9	56,4		13,045	+1	238. 1. 34,31					51. 3. 7,63	C.
	$\beta$ Ursæ Minoris R.	4. 18,0	20,2	18,9	19,6	19,5	17,6		13,841	-1	67. 17. 37,92	29,583		39,0	24,47	15. 14. 54,17	C.
	$\beta$ Ursæ Minoris..	0. 42,3	39,9	40,4	41,1	43,0	38,6		13,841	+ $\frac{1}{2}$	202. 14. 0,13		46,0			15. 14. 55,10	C.
	(h) Polaris.....	2. 39,7	37,4	39,3	38,4	41,1	37,0				188. 27. 39,36	29,558	50,0	55,6	41,84	1. 28. 16,96	C.
May 8	(i) Zenith Point....	1. 30,9	31,5	30,4	35,0	34,7	32,5	+2,3	11,085		224. 45. 48,80						C.
	Arcturus.....	2. 44,0	41,6	43,5	43,4	43,5	42,8		12,560		257. 1. 29,08	29,516	48,5	42,6	36,87	70. 3. 25,15	C.
	$\alpha^2$ Libræ.....	2. 25,0	21,9	22,5	23,4	24,4	22,0				292. 22. 23,38				140,88	105. 26. 3,46	C.
	$\alpha$ Serpentis.....	4. 31,6	29,3	32,4	33,0	29,8	31,4				270. 4. 31,60	29,528		40,6	59,28	83. 6. 50,08	C.
	$\gamma$ Serpentis.....	4. 39,4	35,8	40,1	39,8	38,4	38,0				260. 49. 38,93				42,72	73. 51. 40,85	C.
	(k) $\beta^1$ Scorpii.....	4. 61,0	55,4	59,4	59,8	60,1	57,4				296. 19. 58,85	29,529	45,0	40,5	174,39	109. 24. 12,44	C.
	B.A.C. 5330.....	....	....	....	....	....	....		9,550	+ $\frac{1}{2}$	296. 19. 47,37				174,36	109. 24. 0,93	C.
	$\delta$ Ophiuchi.....	1. 20,3	14,4	18,9	17,5	18,0	17,5		9,034		280. 16. 17,16				85,25	93. 19. 1,61	C.
May 9	$\odot$ S.L.....	4. 60,0	57,4	60,7	57,6	60,4	58,0		14,261	- $\frac{1}{2}$	259. 53. 9,60	29,660	49,8	55,6	40,20	72. 55. 9,00	C.
	$\odot$ N.L.....	3. 16,8	14,7	16,5	16,0	15,4	14,8		14,261	+1 $\frac{1}{2}$	259. 21. 26,63				39,41	72. 23. 25,24	C.
	$\beta$ Leonis.....	4. 36,3	35,6	40,0	37,4	39,3	33,6				261. 34. 37,38	29,834	49,7	44,8	43,98	74. 36. 40,56	C.
	(l) Polaris SP.....	1. 11,4	9,9	10,6	12,5	11,8	9,9				185. 31. 9,13	29,854		42,5	48,25	-1. 28. 19,92	C.
	Spica.....	0. 48,2	43,6	45,6	46,5	47,6	43,0				287. 20. 45,82				113,47	100. 23. 58,49	C.
	$\nu$ Bootis R.....	0. 15,1	15,5	14,8	16,1	14,9	14,3		9,687	-1 $\frac{2}{3}$	9. 5. 0,72			40,8	42,57	73. 28. 38,65	C.
	$\nu$ Bootis.....	1. 49,7	47,9	50,1	50,0	51,0	46,5		9,687	+2	260. 26. 35,18					73. 28. 36,95	C.
	(m)(c) Hebe B.....	3. 35,4	35,2	35,8	34,8	35,4	36,4		6,240	+ $\frac{1}{2}$	266. 34. 32,78	29,835	45,5	40,5	53,02	79. 36. 45,00	C.
	Arcturus.....	1. 27,0	24,5	27,0	29,0	28,7	24,2				257. 1. 26,85				37,43	70. 3. 23,48	C.
	5 Ursæ Minoris R.	4. 39,0	35,0	37,9	37,7	36,8	35,7		12,989		68. 53. 14,18			40,1	26,58	13. 39. 16,04	C.
	(n) 5 Ursæ Minoris..	4. 47,3	44,3	48,0	43,0	48,0	43,0		12,989	+1 $\frac{1}{2}$	200. 38. 24,17					13. 39. 16,79	C.
	$\alpha$ Serpentis.....	4. 29,5	30,8	31,4	28,6	30,6	27,5				270. 4. 30,08	29,860	43,3	38,9	60,15	83. 6. 49,43	C.
	$\gamma$ Serpentis.....	4. 37,4	37,4	39,4	35,0	37,6	33,4				260. 49. 37,05				43,36	73. 51. 39,61	C.
	$\theta$ Draconis.....	1. 33,3	30,5	32,2	31,3	33,2	28,9			+1 $\frac{1}{2}$	218. 1. 32,48				7,04	31. 2. 44,64	C.
	$\delta$ Ophiuchi.....	1. 18,3	12,4	16,9	15,0	15,1	13,7				280. 16. 15,33	29,886	43,6	38,4	86,65	93. 19. 1,18	C.
May 10	$\odot$ N.L.....	0. 34,9	31,9	35,6	34,8	35,1	31,9			+2 $\frac{1}{2}$	259. 5. 34,85	30,303	48,8	54,6	39,95	72. 7. 34,00	C.

ONE REVOLUTION of the MICROMETER = 20", 856.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8", 00.

ONE INTERVAL from the middle wire for an Equatorial Star = 16", 6.

(a) The reading of Microscope D having been accidentally omitted, that of C is not used. The seconds of adopted Zenith Point for the four microscopes are 48", 76. (b) 'Not good: very faint.' (c) Reduction to wire-reading = + 0", 023. (d) The Circle reading for the reflection observation has been increased 5', and that for the other diminished 5'. (e) Time by Molyneux, 1h. 3m. 16s. M. slow on 11, 22", 5. (f) Time by Molyneux, 13h. 9m. 0s. M. slow on 11, 22", 4. (g) 'Good.' (h) Time by Molyneux, 1h. 1m. 40s. M. slow on 11, 23s. (i) High wind: the mercury unsteady. (k) Negative correction for Runs. (l) Time by Molyneux, 13h. 6m. 20s. M. slow, 1m. 33s. (m) Faint from strong moon-light. (n) The seconds of Microscope A were set down 17, 3.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for $\delta$ .	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"					Inch.	o	o	"	o	"	"	
May 10	78 Ursæ Maj. R.	3.26,9	25,6	27,3	28,1	27,8	25,6	+2,3	12,620	-1 $\frac{1}{2}$	49.42.11,59	29,948	49,0	45,7	5,09	32.50.40,12			C.
	78 Ursæ Majoris.	0.40,0	38,2	37,9	39,7	41,6	36,4		12,620	+2	219.49.24,45					32.50.38,56			C.
	$\zeta$ Virginis.....	3.23,0	20,0	23,9	23,1	23,3	21,7				276.48.22,77	29,956	48,5	45,4	75,44	89.50.57,41			C.
May 11	Arcturus R.....	1.19,6	18,5	19,8	21,2	21,3	18,4		12,404	-2	12.30.8,69	30,052	50,4	46,5	37,24	70.3.25,35			C.
	Arcturus.....	2.37,3	36,9	38,8	37,6	40,0	36,1		12,404	+1 $\frac{1}{2}$	257.1.27,00					70.3.23,44			C.
	$\gamma$ Bootis.....	1.32,0	31,0	31,0	33,4	35,0	29,2				238.1.32,05				13,91	51.3.5,16			C.
	109 Virginis.....	1.59,4	55,0	60,3	58,9	61,1	55,9				274.26.58,58				69,44	87.29.27,22			C.
	$\beta$ Ursæ Minoris..	3.58,6	55,3	56,9	56,1	58,5	53,6				202.13.56,80	30,054	50,0	46,0	24,51	15.14.51,49			C.
	$\beta$ Libræ.....	2.28,0	28,5	29,5	28,2	29,9	25,1				285.47.28,38				106,30	98.50.33,88			C.
	$\delta$ Draconis.....	0.59,6	57,6	58,4	58,6	60,2	56,1		11,395	+1	217.30.8,80	30,058	49,0	44,6	7,55	30.31.20,45			C.
	$\alpha$ Serpentis.....	4.30,5	28,2	32,0	30,4	30,6	29,7				270.4.30,58				59,83	83.6.49,61			C.
	(a) Polaris.....	2.39,9	37,6	41,0	41,5	42,8	36,5				188.27.40,22	30,140	50,0	56,9	42,54	1.28.16,88			C.
May 12	$\odot$ N.L.....	1.37,9	38,1	37,1	40,0	40,0	37,0	+0,9	14,390	-1	258.34.45,86	30,133	51,9	61,4	38,44	71.36.44,46			C.
	$\odot$ S.L.....	3.17,9	18,2	19,7	19,5	22,1	17,6		14,390	+1	259.6.27,09				39,21	72.8.26,46			C.
May 13	$\beta$ Leonis.....	4.36,2	34,9	36,5	35,8	40,4	33,0				261.34.36,27	30,060	55,6	52,5	43,62	74.36.40,05			C.
	$\delta$ Ursæ Majoris R.	4.28,9	28,0	27,0	28,0	30,9	27,9		11,355		50.23.39,46	30,059	55,0	51,3	5,76	32.9.10,62			C.
	$\delta$ Ursæ Majoris..	3.46,8	44,2	45,0	44,2	49,0	43,4		11,355	+2	219.7.57,39					32.9.11,79			C.
	Arcturus R.....	1.53,1	52,4	52,8	53,2	56,5	52,9		14,014	-2	12.30.8,74	30,073	52,5	48,4	37,12	70.3.24,22			C.
	Arcturus.....	3.8,9	10,4	10,0	10,5	13,0	7,5		14,014	+1	257.1.25,63					70.3.22,91			C.
	$\delta$ Libræ.....	2.24,4	22,8	22,3	23,5	25,0	20,4		16,821	+2	292.19.39,85	30,078	53,0	48,0	141,63	105.23.21,64			C.
	$\alpha^2$ Libræ.....	...	...	...	...	...	...				292.22.23,13				141,95	105.26.5,24			C.
	$\beta$ Libræ.....	2.30,2	27,5	27,0	26,3	27,7	24,4				285.47.27,25			47,5	106,05	98.50.33,46			C.
May 14	(b) Polaris.....	2.40,4	38,3	41,4	40,7	42,1	38,9				188.27.40,48	30,092	51,0	55,8	42,57	1.28.18,07			C.
May 15	$\odot$ S.L.....	3.18,9	14,6	19,1	17,8	19,0	15,4		11,306	-1	258.22.29,36	30,104	56,4	58,9	38,30	71.24.27,82			C.
	$\odot$ N.L.....	1.38,0	32,3	35,6	36,6	38,5	33,4		11,306	+1	257.50.47,91				37,54	70.52.45,61			C.
	Zenith Point....	1.24,9	23,6	21,7	25,5	25,5	23,8		10,744		224.45.47,84								C.
	$\beta$ Leonis R.....	2.31,5	32,0	31,5	31,4	34,2	31,0		10,724	-1 $\frac{1}{2}$	7.56.55,97	30,084	54,8	49,6	43,91	74.36.43,78			C.
	$\beta$ Leonis.....	0.14,5	10,9	12,3	15,4	15,5	12,0		10,724	+1	261.34.37,51					74.36.41,58			C.
	$\alpha$ Virginis.....	0.9,8	4,8	8,2	6,8	9,3	5,3				267.25.7,37				54,03	80.27.21,56			C.
	$\gamma$ Comæ.....	3.23,0	19,0	22,0	19,6	22,6	19,0				247.53.20,97	30,116	54,0	48,7	25,14	60.55.6,27			C.
	$\kappa$ Draconis.....	3.11,4	8,0	11,5	9,6	11,5	7,2			+1	206.23.10,39				19,56	19.24.10,99			C.
	(c) 78 Ursæ Maj. R.	3.9,0	10,1	7,2	10,0	10,3	6,7		11,643		49.42.13,86	30,100		47,5	5,10	32.50.36,88			C.
	78 Ursæ Majoris.	0.19,4	16,1	14,9	16,3	18,4	13,0		11,643	+2 $\frac{1}{2}$	219.49.22,69					32.50.37,75			C.
	(d) Polaris SP.....	1.9,6	6,7	7,7	8,6	10,0	6,5				185.31.7,99				48,15	-1.28.20,00			C.
	$\zeta$ Virginis.....	3.21,8	19,5	22,2	21,0	22,4	19,8				276.48.21,22	30,094	52,5	47,0	75,54	89.50.56,92			C.
May 16	Arcturus R.....	2.29,0	27,4	29,0	29,6	30,8	26,9		15,751	-1	12.30.8,00	30,088	50,5	46,8	37,26	70.3.25,10			C.
	Arcturus.....	3.48,2	44,6	48,6	32,9	49,2	46,1		15,751	+1 $\frac{1}{2}$	257.1.24,37					70.3.21,79			C.
	$\beta$ Leonis.....	4.37,3	32,3	36,0	34,2	36,4	31,6				261.34.34,77	30,144	51,0	44,2	44,49	74.36.39,42			C.
	$\alpha$ Virginis.....	0.9,9	7,0	8,9	9,6	9,2	5,8				267.25.8,40				54,75	80.27.23,31			C.
	(e) $\delta$ Ursæ Majoris R.	...	...	10,1	14,9	15,0	12,1	+0,7	13,493		50.23.39,32	30,135	49,8	43,0	5,88	32.9.10,60			C.
	$\delta$ Ursæ Majoris..	4.31,7	26,4	29,4	28,0	29,6	27,3	+0,9	13,493	+2 $\frac{1}{2}$	219.7.56,65					32.9.10,93			C.
	$\kappa$ Draconis R....	0.23,5	21,0	20,5	23,4	24,0	21,9		14,535	-2 $\frac{1}{2}$	63.8.26,76			42,6	19,82	19.24.9,26			C.
	$\kappa$ Draconis.....	0.9,7	4,1	5,6	6,9	9,0	2,5		14,535	+2	206.23.10,97					19.24.11,31			C.
	(f) $\nu$ Bootis.....	1.36,5	31,0	34,4	33,5	35,5	30,9				260.26.33,68	30,124		39,7	43,05	73.28.36,89			C.
	Arcturus R.....	1.30,6	28,4	31,0	31,8	32,9	29,3		12,870		12.30.10,01	30,129	44,7	38,5	37,95	70.3.23,78			C.
	Arcturus.....	2.46,8	44,8	46,7	46,6	47,6	43,4		12,870		257.1.25,36					70.3.23,47			C.
	$\gamma$ Bootis.....	1.32,1	27,8	31,3	30,8	32,0	27,9				238.1.30,37				14,18	51.3.4,71			C.
May 17	(g) Polaris.....	2.44,6	40,9	43,0	43,0	42,0	39,4				188.27.42,41	30,106	48,3	50,7	43,03	1.28.19,54			C.
	$\odot$ S.L.....	0.16,1	12,1	13,6	15,0	13,7	12,1		10,294	+2 $\frac{1}{2}$	257.54.47,51	30,089	51,6	58,2	37,67	70.56.45,34			C.
	(h) $\gamma$ Serpentis R....	2.4,8	4,1	3,5	5,3	7,0	8,0		9,230	-2	188.42.0,55	30,002	53,8	50,7	42,51	73.51.37,80			C.
	$\gamma$ Serpentis.....	4.41,9	39,3	41,4	39,8	43,6	39,0		9,230	+2	260.49.36,34					73.51.39,01			C.
	$\delta$ Ophiuchi.....	1.17,0	14,1	15,6	16,5	16,6	14,4				280.16.15,73			50,1	84,91	93.19.0,80			C.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Time by Molyneux, 1<sup>h</sup>.2<sup>m</sup>.5<sup>s</sup>. M. slow on H, 31<sup>s</sup>. The Barometer reading was set down 31,400, and is altered conjecturally. (b) Time by Molyneux, 1<sup>h</sup>.2<sup>m</sup>.15<sup>s</sup>. M. slow on H, 35<sup>s</sup>. (c) The Barometer reading was written 31,000, and is altered conjecturally. (d) Time by Molyneux, 13<sup>h</sup>.5<sup>m</sup>.50<sup>s</sup>. M. slow on H, 36<sup>s</sup>. (e) The reading of microscope B being accidentally omitted, that of A is not retained. The seconds of the adopted Zenith Point = 47",80. (f) The pointer reading has been increased 5". (g) Time by Molyneux, 1<sup>h</sup>.1<sup>m</sup>.45<sup>s</sup>. M. slow on H, 38<sup>s</sup>. (h) 'Good.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
May 18	κ Draconis R. ...	4. 8,0	7,2	6,7	8,0	8,9	5,4	+0,9	10,934	-1	63. 8. 26,72	30,118	51,0	42,6	19,81	19. 24. 9,31	C.		
	κ Draconis .....	3. 55,0	51,0	53,6	51,6	55,4	49,5		10,934	+½	206. 23. 12,57					19. 24. 12,92	C.		
	(a) γ Bootis R. ....	0. 35,1	30,9	31,8	33,9	33,8	32,9		10,296		31. 30. 6,05	30,123	45,0	39,7	14,14	51. 3. 3,93	C.		
	(b) γ Bootis .....	1. 61,6	56,4	59,1	59,4	60,9	56,6		10,296	+2	238. 1. 32,52					51. 3. 6,82	C.		
	ε Bootis .....	1. 47,8	43,2	48,0	46,1	48,0	43,2				249. 16. 46,10				27,36	62. 18. 33,62	C.		
	β Ursæ Minoris R.	0. 7,5	5,3	4,5	8,3	7,6	5,0		15,890		67. 17. 42,67	30,118		39,0	24,92	15. 14. 48,25	C.		
	β Ursæ Minoris.	1. 23,0	17,6	20,5	21,0	21,4	18,0		15,890	+1½	202. 13. 57,82					15. 14. 53,06	C.		
	δ Bootis .....	1. 43,7	38,0	42,0	40,6	42,6	37,8			+2	243. 6. 41,24		44,0	38,5	19,94	56. 8. 21,34	C.		
	ι Draconis .....	0. 9,0	3,4	6,4	5,8	6,1	2,5				217. 30. 5,53				7,66	30. 31. 18,03	C.		
May 19	(c) Polaris SP. ....	1. 10,0	6,0	9,6	10,0	11,0	8,0	-0,2			185. 31. 8,98	30,167	51,6	47,0	48,31	-1. 28. 20,03	C.		
	ζ Ursæ Majoris R.	0. 47,5	48,0	46,0	49,5	49,6	45,5		13,190	-2	48. 14. 19,41				3,59	34. 18. 33,70	C.		
	ζ Ursæ Majoris.	3. 47,0	42,9	44,4	45,0	45,5	42,5		13,190	+1½	221. 17. 17,62					34. 18. 33,33	C.		
	η Bootis .....	0. 12,1	8,8	9,4	11,7	11,5	8,7				257. 50. 10,37	30,160	50,8	45,4	38,64	70. 52. 8,31	C.		
	Arcturus R. ....	0. 14,5	12,9	13,3	17,0	16,2	13,6		9,221		12. 30. 9,97				37,45	70. 3. 24,18	C.		
	Arcturus .....	1. 31,4	28,4	29,0	31,3	28,0	28,5		9,221	+2	257. 1. 25,03					70. 3. 21,78	C.		
	109 Virginis .....	1. 59,3	55,7	58,2	60,0	59,0	55,9				274. 26. 58,00	30,160	48,7	43,9	70,07	87. 29. 27,37	C.		
	(d) α Coronæ R. ....	1. 20,9	19,9	19,4	21,0	20,5	19,4		10,409	-1	19. 45. 50,70		47,0	42,5	27,84	62. 47. 33,84	C.		
	(e) Polaris .....	2. 43,6	42,3	42,4	43,7	44,0	42,4				188. 27. 43,19	30,112	51,6	50,6	42,27	1. 28. 20,22	C.		
	May 21	(f) Polaris .....	2. 43,4	39,7	41,9	44,0	44,8	40,6				188. 27. 42,43	29,534	54,3	54,9	41,86	1. 28. 19,87	C.	
May 22	Zenith Point ....	1. 34,3	32,8	30,6	36,2	36,2	33,1		11,165		224. 45. 48,70						C.		
May 23	⊙ S.L. ....	1. 41,4	35,5	37,1	38,1	40,7	37,4		15,120	-1	256. 39. 30,62	29,517	55,0	56,4	35,34	69. 41. 25,26	C.		
	(g) ⊙ N.L. ....	4. 64,7	58,6	60,5	62,5	61,4	61,4		15,120	+1	256. 7. 54,07				34,62	69. 9. 47,99	C.		
	δ Ursæ Majoris R.	4. 28,5	28,1	27,5	31,0	31,7	28,5		11,214	-1½	50. 23. 42,46	29,591	54,6	49,4	5,70	32. 9. 8,54	C.		
	δ Ursæ Majoris.	3. 44,3	37,8	42,9	41,2	44,1	41,0		11,214	+1	219. 7. 55,91					32. 9. 9,51	C.		
	β Canum Venat. R.	3. 15,1	12,4	13,0	14,7	13,8	12,2		11,566	-2	34. 42. 19,46				10,25	47. 50. 47,49	C.		
	β Canum Venat.	0. 12,5	5,0	7,8	9,8	10,5	7,7		11,566	+1	234. 49. 15,50					47. 50. 45,05	C.		
	(h) Polaris SP. ....	1. 11,6	7,4	7,0	10,4	9,4	7,3				185. 31. 8,84	29,616		47,0	47,43	-1. 28. 19,29	C.		
	H. C. 29052 .....	3. 20,4	12,6	18,6	17,1	17,0	14,9				293. 48. 16,75	29,626	49,0	42,5	151,95	106. 52. 8,00	C.		
	May 24	(i) Polaris .....	2. 45,9	39,0	43,4	43,6	44,0	39,8				188. 27. 42,75	29,771	52,5	54,4	42,24	1. 28. 19,81	C.	
May 25	(k) ⊙ N.L. ....	1. 35,2	32,1	34,8	35,5	37,7	32,4		11,804		255. 45. 36,12	29,767	54,2	59,6	34,19	68. 47. 29,61	C.		
	⊙ S.L. ....	3. 11,4	7,6	10,6	9,4	10,1	5,9		11,804	+1½	256. 17. 11,00				34,90	69. 19. 5,20	C.		
	(l) Polaris SP. ....	1. 8,4	2,9	4,7	8,1	7,7	6,8				185. 31. 6,33	29,732	53,8	49,6	47,36	-1. 28. 21,73	C.		
	γ Bootis R. ....	0. 47,5	45,3	44,4	48,4	49,0	45,8		10,874	-2	31. 30. 7,14	29,722	52,4	46,4	13,76	51. 3. 3,32	C.		
	γ Bootis .....	2. 10,8	4,4	5,9	7,4	9,4	5,8		10,874	+2	238. 1. 28,67					51. 3. 1,73	C.		
	B. (w.) xiv. 768.	4. 59,6	55,0	58,7	56,0	57,5	55,0				287. 9. 56,93				111,21	100. 13. 7,44	C.		
	B. (w.) xv. 529.	3. 6,1	0,9	5,3	4,3	2,4	2,6				291. 58. 3,58	29,694	50,4	44,7	138,36	105. 1. 41,24	C.		
	γ Serpentis .....	4. 36,8	33,5	35,4	34,0	34,0	32,8				260. 49. 34,38				42,60	73. 51. 36,28	C.		
	May 26	⊙ S.L. ....	2. 18,1	15,4	17,3	17,0	17,4	14,3	+4,0	11,020	-1	256. 6. 34,67	29,628	54,6	60,0	34,47	69. 8. 28,06	C.	
⊙ N.L. ....	0. 39,0	36,2	37,0	38,9	42,4	35,7		11,020		255. 34. 56,15				33,76	68. 36. 48,83	C.			
ε Bootis R. ....	0. 33,4	32,2	32,3	35,6	35,7	32,0		10,886	-1	20. 14. 54,21	29,650	53,5	46,9	26,53	62. 18. 29,40	C.			
ε Bootis .....	2. 25,0	19,8	23,0	22,6	24,7	21,0		10,886	+2	249. 16. 43,98					62. 18. 29,43	C.			
(m)(n) Thalia B. ....	2. 63,0	58,0	61,0	58,8	61,0	57,0		89,000		290. 31. 28,68				128,48	103. 34. 56,08	C.			
(o) B. (w.) xv. 472.	3. 58,2	52,4	57,1	55,2	55,8	52,5				291. 18. 55,72	29,654	51,5	45,9	133,60	104. 22. 28,24	C.			
B.A.C. 5188 .....	0. 52,1	45,8	50,3	50,4	50,0	46,7				291. 30. 49,33				134,87	104. 34. 23,12	C.			
θ Draconis R. ...	1. 17,5	16,6	15,8	20,3	17,3	15,4		12,129	-1¾	51. 30. 11,29	29,649	50,2	44,6	6,91	31. 2. 38,88	C.			
θ Draconis .....	2. 34,9	28,9	31,9	32,1	31,9	30,5		12,129		218. 1. 26,77					31. 2. 38,78	C.			
Antares .....	0. 24,7	19,0	22,8	22,9	22,2	21,0				303. 0. 22,15			43,8	274,20	116. 6. 15,27	C.			
May 27	(p) Polaris SP. ....	1. 9,0	4,5	5,6	9,0	8,3	5,9				185. 31. 7,01	29,648	53,0	48,9	47,29	-1. 28. 21,36	C.		
	(q)(n) Thalia B. ....	3. 38,4	31,9	36,9	33,9	35,4	31,6		89,000	+½	290. 32. 3,68	29,650	50,0	44,5	129,17	103. 35. 31,77	C.		
	* R. 15 <sup>h</sup> . 14 <sup>m</sup> . 47 <sup>s</sup>	3. 11,4	5,1	9,0	8,0	6,2	5,1			+1	290. 13. 7,84				127,31	103. 16. 34,07	C.		
	H. C. 28832 .....	4. 21,3	16,6	21,6	17,4	17,8	16,3				297. 4. 19,08			43,9	181,46	110. 8. 39,46	C.		

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8".00.

(a) Wind: the night unfavorable for reflection observations. (b) This observation is discordant: see May 16. (c) Time by Molyneux, 13<sup>h</sup>. 5<sup>m</sup>. 0<sup>s</sup>.  
 M. slow, 1<sup>m</sup>. 34<sup>s</sup>. (d) Hid by cloud at the direct observation. (e) Tremulous. Time by Molyneux, 1<sup>h</sup>. 1<sup>m</sup>. 45<sup>s</sup>. M. slow on H, 43<sup>s</sup>. (f) Time by Molyneux,  
 1<sup>h</sup>. 2<sup>m</sup>. 21<sup>s</sup>. M. slow on H, 46<sup>s</sup>. (g) Negative correction for Runs. (h) Time by Molyneux, 13<sup>h</sup>. 3<sup>m</sup>. 30<sup>s</sup>. M. slow on H, 49<sup>s</sup>. (i) Time by Molyneux,  
 1<sup>h</sup>. 1<sup>m</sup>. 30<sup>s</sup>. M. slow on H, 51<sup>s</sup>. (k) Faint: the shutters out of order. (l) Time by Molyneux, 13<sup>h</sup>. 4<sup>m</sup>. 35<sup>s</sup>. M. slow, 2<sup>m</sup>. 18<sup>s</sup>. (m) The clamping of  
 the Circle was inadvertently omitted. (n) Reduction to wire-reading = + 0",002. (o) 'Another preceding one interval.' (p) Time by Molyneux, 13<sup>h</sup>. 5<sup>m</sup>. 0<sup>s</sup>.  
 M. slow on H, 54<sup>s</sup>. (q) The recorded Circle reading has been increased 5'.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	r.					
May 27	$\theta$ Draconis R. ...	1. 45,4	43,9	42,3	46,5	46,9	43,4	+4,0	13,510		51. 30. 10,91	29,650	49,2	43,1	6,93	31. 2. 39,24	C.		
	$\theta$ Draconis .....	3. 6,2	0,9	4,1	3,0	3,1	1,4		13,510		218. 1. 29,47					31. 2. 41,46	C.		
May 29	Zenith Point ....	1. 26,5	27,6	24,5	28,9	28,2	26,7		10,832		224. 45. 49,08							C.	
May 30	(a) $\odot$ S.L. ....	3. 32,1	28,9	31,7	31,0	32,4	30,2		11,205	-1	255. 27. 45,48	29,742	54,5	60,8	33,67	68. 29. 38,07	C.		
	(b) Polaris SP. ....	1. 6,2	1,3	2,3	6,0	5,4	3,5				185. 31. 4,11	29,786	55,2	52,0	47,21	- 1. 28. 24,18	C.		
	Spica .....	0. 49,9	45,3	47,2	50,6	51,2	46,4				287. 20. 48,53				111,01	100. 23. 58,46	C.		
	(c) $\delta$ Draconis R. ....	0. 22,0	20,7	19,1	24,2	20,4	20,6		11,178	-1	57. 59. 35,46	29,790	54,6	50,2	13,65	24. 33. 7,97	C.		
	$\delta$ Draconis .....	2. 49,0	43,5	46,3	45,4	49,0	44,1		11,178		211. 32. 1,48					24. 33. 6,75	C.		
May 31	(d) Polaris SP. ....	1. 7,9	7,6	6,9	4,4	2,9	4,8				185. 31. 5,59	29,930	56,9	54,8	47,17	- 1. 28. 22,66	C.		
	Spica .....	0. 49,4	44,4	45,9	49,4	50,9	46,4				287. 20. 47,83				110,91	100. 23. 57,66	C.		
	(e) $\delta$ Draconis R. ...	0. 41,8	39,9	39,7	45,6	45,4	42,0		12,114	-1	57. 59. 37,22				13,59	24. 33. 6,27	C.		
	$\delta$ Draconis .....	3. 8,6	3,3	5,4	5,3	5,8	3,4		12,114	+1	211. 32. 1,10					24. 33. 6,43	C.		
	Arcturus R. ....	0. 40,4	40,5	39,8	42,2	45,0	38,9		10,420	-2	12. 30. 11,39	29,934	56,0	52,0	36,68	70. 3. 22,37	C.		
	Arcturus .....	1. 56,2	50,5	54,5	53,8	56,3	57,4		10,420		257. 1. 25,41					70. 3. 21,01	C.		
	B.A.C. 4896 .....	2. 5,1	3,2	4,0	4,4	5,4	0,7				294. 7. 4,08		55,5	50,5	153,46	107. 10. 56,46	C.		
	(f) * $\bar{A}$ . 15 <sup>h</sup> . 14 <sup>m</sup> . 50 <sup>s</sup> .	3. 9,8	7,8	9,5	8,5	9,5	4,5			+2	290. 13. 8,54	29,936	54,6	49,7	127,17	103. 16. 34,63	C.		
	(g) H. C. 28266 .....	0. 11,4	8,3	9,1	12,4	11,6	8,1				295. 50. 10,17				168,63	108. 54. 17,72	C.		
	B. (w.) xv. 637 ..	1. 39,1	35,9	36,8	38,2	40,0	35,1				292. 1. 37,73				138,44	105. 5. 15,09	C.		
	B. (w.) xv. 644 ..	...	...	...	...	...	...		7,578	+ $\frac{1}{2}$	292. 2. 7,38				138,50	105. 5. 44,80	C.		
	$\gamma$ Serpentis R. ....	2. 8,2	5,9	8,6	10,6	10,6	5,2		9,309	-2	8. 42. 1,85	29,932	54,0	48,9	42,57	73. 51. 37,80	C.		
	$\gamma$ Serpentis .....	4. 40,6	38,9	41,1	39,0	41,3	36,9		9,309	+ $\frac{1}{2}$	260. 49. 33,81					73. 51. 35,30	C.		
	(h) $\eta$ Draconis R. ...	0. 47,5	43,8	43,3	49,2	49,2	44,5		15,684	-1	54. 23. 26,67	29,930	54,0	48,1	9,94	28. 9. 20,47	C.		
	$\eta$ Draconis .....	0. 30,9	24,4	29,8	30,1	30,4	27,4		15,684	+1	215. 8. 9,78					28. 9. 18,76	C.		
June 10	(i) $\odot$ S.L. ....	3. 16,2	15,6	15,2	17,1	15,5	13,1	+1,8	10,643	+1	254. 12. 41,50	29,852	55,6	59,4	32,23	67. 14. 32,58	B.		
	$\odot$ N.L. ....	1. 44,2	42,1	42,1	44,3	46,6	39,7		10,643	+1	253. 41. 9,12				31,54	66. 42. 59,51	B.		
June 12	(k) Zenith Point ....	1. 34,0	35,0	31,1	35,2	36,2	33,3		11,161		224. 45. 49,15							C.	
	(l) $\alpha$ Serpentis .....	4. 27,0	25,7	27,4	26,8	28,3	24,4				270. 4. 26,87	29,600	56,6	50,7	58,19	83. 6. 43,91	C.		
	(m) B. (w.) xv. 916 ..	0. 30,6	27,6	28,8	29,7	31,5	26,3				291. 20. 29,12				132,20	104. 24. 0,17	C.		
	H. C. 29175 .....	0. 62,7	57,9	59,0	59,4	61,8	57,0				292. 55. 59,70		53,7	50,1	142,99	105. 59. 41,54	C.		
	(n) H. C. 30641 B. ....	3. 42,8	39,6	40,5	39,2	41,5	37,4		89,000		296. 2. 8,90	29,607	53,2	48,2	169,18	109. 6. 16,93	C.		
	(n)(o) H. C. 30959 B. .	3. 60,3	56,1	59,1	57,4	58,8	55,6		89,000		296. 12. 26,64				170,83	109. 16. 36,32	C.		
	(n) A. (o.) 16266 B. .	...	...	...	...	...	...		3,707	+1	296. 10. 48,42				170,57	109. 14. 57,84	C.		
June 14	$\gamma$ Bootis R. ....	1. 29,4	29,0	26,8	31,6	31,0	27,6		12,765	-2	31. 30. 10,32	29,692	57,3	53,5	13,55	51. 3. 0,38	C.		
	$\gamma$ Bootis .....	2. 45,9	40,6	43,1	43,9	46,3	40,4		12,765	+2	238. 1. 25,49					51. 2. 57,89	C.		
	109 Virginis .....	1. 59,3	56,4	59,5	59,9	60,7	55,5				274. 26. 58,67				67,64	87. 29. 25,16	C.		
	$\beta$ Ursæ Minoris R. .	0. 18,5	18,4	16,0	20,5	20,2	16,6		16,141		67. 17. 49,45	29,686	56,9	52,5	23,89	15. 14. 43,81	C.		
	$\beta$ Ursæ Minoris ..	1. 19,6	15,6	17,2	19,0	21,0	15,3		16,141	+1 $\frac{1}{2}$	202. 13. 50,34					15. 14. 45,30	C.		
June 15	(p) $\zeta$ Draconis R. ...	3. 14,6	13,8	12,6	12,9	15,2	10,8		14,274	-2	58. 26. 22,19	29,776	57,8	52,0	14,07	24. 6. 20,89	C.		
	$\zeta$ Draconis .....	2. 8,0	3,8	6,4	7,0	9,8	3,7		14,274		211. 5. 16,59					24. 6. 21,37	C.		
	$\psi^1$ Draconis .....	0. 29,5	23,5	24,9	28,2	28,1	25,0		7,534		204. 45. 57,10	29,772	57,0	50,6	21,10	17. 46. 54,85	C.		
	B.A.C. 6048 .....	...	...	...	...	...	...				204. 45. 26,53				21,11	17. 46. 24,27	C.		
June 17	(q) $\odot$ S.L. ....	1. 55,4	52,9	52,7	53,8	54,9	49,0	-3,4	13,704	- $\frac{1}{2}$	253. 50. 14,80	29,540	58,8	65,3	31,04	66. 52. 5,89	C.		
	$\odot$ N.L. ....	0. 22,8	18,4	21,0	21,9	23,6	16,7		13,704	+ $\frac{1}{2}$	253. 18. 42,62				30,38	66. 20. 33,05	C.		
	(r) Polaris SP. ....	0. 64,5	59,8	61,2	62,9	65,7	61,2				185. 31. 2,14	29,594	59,0	57,8	46,36	- 1. 28. 24,17	C.		
	Spica .....	0. 52,3	46,9	48,9	51,9	51,5	47,9				287. 20. 49,80				109,01	100. 23. 58,86	C.		
	$\eta$ Ursæ Majoris ..	0. 53,2	47,5	50,6	51,9	54,2	48,5				226. 55. 50,88	29,590	57,8	54,8	2,16	39. 57. 13,09	C.		
	(s) Arcturus R. ....	1. 21,4	20,0	21,9	21,6	25,4	17,8		12,220	-2	12. 30. 13,94	29,598	56,9	53,6	36,15	70. 3. 18,16	C.		
	(s) Arcturus .....	2. 33,6	29,0	31,7	31,0	34,7	28,6		12,220		257. 1. 24,11					70. 3. 20,31	C.		
June 19	$\odot$ N.L. ....	1. 53,8	45,9	50,5	48,8	51,5	47,7		11,438		253. 15. 58,65	29,890	59,0	67,4	30,55	66. 17. 49,25	C.		
	$\odot$ S.L. ....	3. 20,8	15,1	21,2	18,1	20,8	16,0		11,438	+1	253. 47. 27,53				31,22	66. 49. 18,80	C.		

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) N.L. clouded. (b) Time by Molyneux, 13<sup>h</sup>. 4<sup>m</sup>. 45<sup>s</sup>. M slow on II, 1<sup>m</sup>. 59<sup>s</sup>. (c) After this it became cloudy. (d) Time by Molyneux, 13<sup>h</sup>. 7<sup>m</sup>. 30<sup>s</sup>. M slow on H, 2<sup>m</sup>. 0<sup>s</sup>. (e) 'Very good.' (f) Observed doubtfully: the sky very thick southward. (g) 'Another of the same R.A. at the top of the field; this was at the bottom,' probably from wrong setting. The recorded N.P.D. has been increased 5'. (h) 'Reflection observations very good this evening.' (i) Steady and observed satisfactorily. (k) High wind disturbed the mercury. (l) The night had hitherto been cloudy. (m) 'The brightest of three.' (n) Reduction to wire-reading = +0",002. (o) 'The preceding star.' (p) 'Good.' Till this time the sky had been cloudy. (q) Very cloudy. (r) Time by Molyneux, 13<sup>h</sup>. 4<sup>m</sup>. 0<sup>s</sup>. M fast, 40<sup>s</sup>. (s) The recorded circle reading of each has been increased 1'.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle readings.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
June 19	(a) Zenith Point ....	1. 23,3	23,8	21,3	24,6	25,8	21,2	-3,4	10,689		224. 45. 47,95						C.
	(b) Polaris SP.....	1. 6,9	0,6	1,3	4,5	5,4	1,0				185. 31. 3,16	29,904	60,4	59,5	46,69	- 1. 28. 23,48	C.
	α Draconis R. ...	3. 28,5	28,4	26,0	28,4	30,4	26,9		12,095	-1	57. 37. 22,85	29,920		56,2	13,15	24. 55. 19,95	C.
	α Draconis .....	0. 21,9	17,4	18,1	18,6	20,9	15,7		12,095	+1	211. 54. 14,50					24. 55. 21,40	C.
	γ Bootis R.....	1. 28,8	27,9	26,5	28,8	30,3	24,6		12,691	-1	31. 30. 10,55	29,920	59,5	54,6	13,62	51. 2. 59,02	C.
	γ Bootis.....	2. 44,4	37,9	43,1	40,0	45,0	39,5		12,691	+1	238. 1. 24,49					51. 2. 58,16	C.
	ε Bootis.....	1. 40,9	35,9	38,5	37,6	40,4	35,8				249. 16. 38,00				26,35	62. 13. 24,40	C.
	B.A.C. 5712.....	2. 7,3	4,0	5,0	5,9	7,0	1,9			+ $\frac{1}{4}$	294. 57. 4,95	29,907	55,9	49,6	160,54	103. 1. 5,54	C.
	(c) H. C. 31157 B...	2. 10,6	6,1	8,3	8,9	10,5	5,6		4,075	+1	292. 3. 50,53				138,59	105. 7. 29,17	C.
	(c) H. C. 31356 B...	4. 44,9	41,0	44,3	42,9	43,5	38,1		5,715	+ $\frac{1}{2}$	294. 40. 50,19				158,24	107. 44. 48,48	C.
	(c)(d) Iris B. ....	3. 20,3	16,9	19,9	19,4	21,9	16,3		8,279	+2 $\frac{1}{2}$	299. 28. 33,26	29,896		49,0	210,41	112. 33. 23,72	C.
June 23	(e) Polaris SP.....	1. 8,6	6,1	4,9	5,8	9,3	4,8	-3,3			185. 31. 2,30	30,100	66,6	72,6	45,79	- 1. 28. 24,07	C.
June 24	⊙ S.L.....	3. 41,7	35,7	38,6	35,9	40,7	33,8		11,058	-1	253. 47. 54,50	30,110	64,7	73,0	31,11	66. 49. 45,03	C.
	(f) ⊙ N.L.....	2. 10,7	5,1	8,1	6,4	8,9	2,6		11,058	+1	253. 16. 23,86				30,44	66. 18. 13,72	C.
June 26	⊙ S.L.....	1. 46,1	42,7	40,6	43,2	48,0	38,5		11,063	- $\frac{1}{2}$	253. 51. 0,00	29,620	67,2	70,8	30,81	66. 52. 50,23	C.
	⊙ N.L.....	0. 12,5	8,1	10,0	10,0	13,0	6,0		11,063	+ $\frac{1}{2}$	253. 19. 26,90				30,14	66. 21. 16,46	C.
	(g) Zenith Point....	1. 43,4	41,5	38,1	44,3	45,1	41,5		11,576		224. 45. 48,58						C.
June 28	β Libræ .....	2. 30,6	29,0	29,2	30,0	30,2	26,6				285. 47. 29,00	29,600	59,4	51,4	103,54	98. 50. 31,96	C.
	(h) α Coronæ R....	1. 21,8	18,5	19,6	24,6	22,9	19,8		10,174	-2	19. 45. 56,25			51,0	26,85	62. 47. 27,18	C.
	α Coronæ.....	0. 65,4	58,4	63,1	61,3	61,7	58,8		10,174	+ $\frac{1}{2}$	249. 45. 36,86					62. 47. 23,13	C.
	α Serpentis.....	4. 27,9	26,6	28,5	27,6	27,6	24,0				270. 4. 26,55				58,16	83. 6. 44,13	C.
	(c) Iris B. ....	4. 50,9	45,3	49,0	46,4	46,7	41,6		89,000	+ $\frac{1}{2}$	299. 3. 14,46	29,602	55,0	47,8	203,15	112. 7. 57,03	C.
	(c)(i) A. (o.) 16632 B..	...	...	...	...	...	...		7,660	+1 $\frac{1}{2}$	299. 0. 13,70				202,49	112. 4. 55,61	C.
	(k) H. C. 31954.....	2. 64,3	60,0	63,1	62,9	61,5	57,5				295. 3. 1,22				160,35	108. 7. 0,99	C.
June 29	(l) Polaris SP.....	0. 65,4	59,1	62,8	63,6	65,0	59,3				185. 31. 2,21	29,560	60,4	63,5	45,78	- 1. 28. 24,15	C.
	Spica.....	0. 53,3	50,0	49,8	52,7	53,6	48,2			+ $\frac{1}{2}$	287. 20. 51,16				107,64	100. 23. 58,22	C.
June 30	(m) ⊙ S.L.....	3. 51,9	47,6	51,0	50,5	52,8	46,5		14,175	+1	254. 2. 1,71	29,683	60,2	66,1	31,39	67. 3. 52,52	C.
	⊙ N.L.....	2. 21,4	15,6	19,9	18,4	20,4	14,6		14,175	+2	253. 30. 30,37				30,72	66. 32. 20,51	C.
July 2	Zenith Point....	1. 60,4	58,9	58,4	62,2	62,5	58,7	+2,2	12,441		224. 45. 48,57						B.
July 3	⊙ S.L.....	0. 18,7	13,8	15,6	17,1	17,7	13,7		11,083		254. 14. 32,68	29,714	61,2	66,4	31,68	67. 16. 23,79	B.
	⊙ N.L.....	3. 49,6	41,8	47,8	45,8	47,5	43,5		11,083	+1 $\frac{1}{2}$	253. 43. 2,90				31,00	66. 44. 53,33	B.
July 11	Zenith Point....	1. 19,9	19,5	16,7	20,0	19,8	16,5	+1,2	10,413		224. 45. 49,31						B.
July 15	(n) ζ Herculis R. ...	0. 16,2	18,0	14,3	17,7	18,9	14,8		8,213	+1 $\frac{1}{4}$	24. 25. 32,93	29,925	59,8	57,3	21,31	58. 7. 45,69	B.
	ζ Herculis .....	0. 46,8	44,1	43,3	43,5	47,8	41,5		8,213	+2 $\frac{1}{4}$	245. 6. 1,52					58. 7. 41,52	B.
	(o) ι Ophiuchi R. ...	3. 35,9	38,1	36,6	38,8	40,2	33,2		9,777		2. 58. 21,07				51,34	79. 35. 27,58	B.
	ι Ophiuchi .....	3. 30,6	32,5	30,9	31,0	31,3	28,6		9,777	+2	266. 33. 14,85					79. 35. 24,87	B.
July 17	α Aquilæ R....	3. 35,9	37,0	37,6	37,4	40,2	33,5	+0,2	10,593	-2	1. 3. 3,64	29,961	57,2	51,3	55,64	81. 30. 48,73	B.
	α Aquilæ.....	4. 5,3	5,0	5,3	5,0	4,8	2,6		10,593		268. 28. 31,48					81. 30. 46,39	B.
	β Aquilæ R....	4. 5,9	7,3	8,1	7,3	9,2	2,9		1,494	+1 $\frac{1}{2}$	358. 36. 43,34				60,57	83. 57. 13,96	B.
	(p) β Aquilæ.....	2. 19,3	18,1	16,9	18,0	19,6	15,9		1,494	+3	270. 54. 54,68					83. 57. 14,52	B.
July 18	(q) ⊙ N.L.....	0. 12,2	13,0	9,9	13,4	13,6	9,6		13,804		255. 38. 31,76	29,960	61,2	67,3	33,72	68. 40. 24,75	B.
	⊙ S.L.....	1. 44,2	45,0	43,3	44,2	47,4	40,4		13,804		256. 10. 3,91				34,43	69. 11. 57,61	B.
	(r) β Aquilæ.....	0. 2,8	3,3	0,3	4,2	3,3	1,9		9,453		270. 54. 53,18	29,946	60,6	57,3	59,81	83. 57. 12,26	B.
July 19	(s) ⊙ S.L.....	1. 12,5	13,0	10,6	14,7	13,2	10,1		10,288		256. 20. 45,49	29,936	63,8	72,5	34,29	69. 22. 39,05	B.
	⊙ N.L.....	4. 39,4	41,0	35,8	40,5	43,5	35,3		10,288		255. 49. 12,42				33,59	68. 51. 5,28	B.
	τ Herculis R. ...	3. 28,5	32,7	26,8	30,2	30,9	28,4		10,515		39. 12. 58,00	30,000	62,9	60,9	5,56	43. 20. 4,29	B.
	τ Herculis .....	4. 10,8	8,7	8,7	8,8	9,6	8,0		10,515	+1 $\frac{1}{2}$	230. 18. 37,89					43. 20. 2,72	B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6. ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) High wind: the reflected image very faint. (b) Time by Molyneux, 13<sup>h</sup>. 6<sup>m</sup>. 10<sup>s</sup>. M fast on H, 1<sup>m</sup>. 39<sup>s</sup>. (c) Reduction to wire reading = + 0",011.  
 (d) So faint as to be visible only by looking at another part of the field. (e) Time by Molyneux, 12<sup>h</sup>. 57<sup>m</sup>. 10<sup>s</sup>. M fast on H, 1<sup>m</sup>. 35<sup>s</sup>. (f) This Limb faint. The shutters were in the way. (g) Very high wind: the image of the wire was tremulous and at times disappeared. (h) Close to the fixed wire.  
 (i) 'North-shutting the Planet.' (k) 'Several objects in the field.' (l) Time by Molyneux, 13<sup>h</sup>. 6<sup>m</sup>. 0<sup>s</sup>. M fast on H, 1<sup>m</sup>. 21<sup>s</sup>. 5. (m) Clouded, but the Limbs good. (n) 'Beautifully steady.' (o) 'Very good: foggy sky but the star steady.' (p) Faint. (q) Unsteady. (r) Cloudy.  
 (s) 'Jerking motion.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
July 20	(a) ☉ N.L.....	1.19,2	18,8	17,1	21,0	19,5	17,6	+0,2	12,069		256. 0. 14,87	30,089	61,7	69,1	34,24	69. 2. 8,38		B.	
	☉ S.L.....	2.52,5	51,6	51,3	52,5	52,8	47,9		12,069		256. 31. 47,44				34,95	69. 33. 41,66		B.	
	Zenith Point....	1.23,4	24,3	19,9	25,0	23,5	22,6		10,649		44. 45. 48,73							B.	
	(b) B.A.C. 7396....	3.62,8	60,7	60,1	62,7	63,3	56,6		10,697		293. 43. 25,98	30,096	60,5	56,3	149,40	106. 47. 14,65		B.	
	18 Aquarii.....	1.33,3	31,3	30,3	32,1	32,8	27,8				290. 26. 31,28				127,42	103. 29. 57,97		B.	
	(c) B.A.C. 7451....	4.16,7	14,2	16,0	15,6	15,7	10,8				289. 14. 14,87				120,68	102. 17. 34,82		B.	
	B.A.C. 7485....	1.27,2	25,9	25,0	27,8	28,4	22,3				293. 46. 26,12				149,78	106. 50. 15,17		B.	
B.A.C. 7507....	0.64,0	61,0	60,4	62,8	63,4	57,7				296. 1. 1,55				168,94	109. 5. 9,76		B.		
July 21	☉ S.L.....	3.26,2	27,0	25,3	26,2	27,1	22,3		9,646		256. 43. 12,23	30,158	62,8	73,3	34,99	69. 45. 6,49		B.	
	☉ N.L.....	1.50,4	50,2	48,9	50,6	52,3	44,9		9,646		256. 11. 36,10				34,28	69. 13. 29,65		B.	
	(d) β Scorpii R....	2.18,7	18,9	17,4	22,4	22,4	16,3		11,405	-1½	333. 11. 29,33	30,184	69,2	65,7	169,27	109. 24. 16,67		B.	
	β Scorpii.....	0.44,0	44,3	40,3	45,0	46,2	38,8		10,841	+1	296. 20. 4,65					109. 24. 13,19		B.	
	B.A.C. 5330 R....	2.18,7	18,9	17,4	22,4	22,4	16,3		10,892	-1½	333. 11. 40,03				169,23	109. 24. 5,93		B.	
	B.A.C. 5330....	0.44,0	44,3	40,3	45,0	46,2	38,8		11,405	+1	296. 19. 52,89					109. 24. 1,39		B.	
July 22	☉ N.L.....	3.29,0	29,6	29,4	28,3	31,8	24,1		9,251		256. 23. 23,48	30,170	64,6	78,4	34,22	69. 25. 16,97		B.	
	☉ S.L.....	4.60,1	59,5	58,4	57,7	60,9	53,6		9,251		256. 54. 53,16				34,93	69. 56. 47,36		B.	
	B.A.C. 5642....	3.51,4	53,9	48,9	52,2	52,6	46,8				293. 13. 51,00	30,148	67,6	68,5	142,41	106. 17. 32,68		B.	
	B.A.C. 5695....	0.29,3	32,0	25,5	32,4	32,9	25,4				293. 30. 29,58				144,42	106. 34. 13,27		B.	
	B.A.C. 5712....	2.10,9	11,0	6,6	12,3	12,7	5,9				294. 57. 9,92				155,74	108. 1. 4,93		B.	
	B.A.C. 5743....	0.61,5	60,5	57,0	62,1	62,8	55,3				300. 5. 59,87				212,67	113. 10. 51,81		B.	
	July 24	(b) ☉ S.L.....	4.18,4	18,6	14,2	18,4	19,5	12,9		8,707		257. 19. 23,11	30,109	67,2	81,8	35,18	70. 21. 17,56		B.
☉ N.L.....		2.44,0	43,6	41,4	42,5	46,0	37,8		8,707		256. 47. 48,68				34,47	69. 49. 42,42		B.	
B.A.C. 5642....		3.52,1	53,0	50,1	50,8	55,2	45,6				293. 13. 51,17	30,091	69,8	68,6	142,11	106. 17. 32,55		B.	
B.A.C. 5695....		0.29,6	30,4	26,9	29,9	33,2	23,8				293. 30. 28,97				144,12	106. 34. 12,36		B.	
B.A.C. 5712....		2.10,9	11,5	8,3	9,3	12,6	3,3				294. 57. 9,33				155,41	108. 1. 4,01		B.	
B.A.C. 5743....		0.62,8	62,3	58,0	60,7	63,2	55,5				300. 6. 0,42				212,23	113. 10. 51,92		B.	
(e) α Herculis R. ...		3.31,9	35,6	31,1	33,4	35,9	30,3		12,555	-1	7. 7. 18,87				43,56	75. 26. 21,42		B.	
α Herculis.....		0.32,3	31,4	28,7	34,2	33,1	28,6		12,555	+1½	262. 24. 17,33					75. 26. 20,16		B.	
July 25		☉ N.L.....	0.46,8	45,9	43,4	47,0	47,8	41,8		9,506	+2	257. 0. 34,80	30,081	70,3	75,4	35,16	70. 2. 29,23		B.
		☉ S.L.....	2.20,4	18,6	16,6	19,4	18,3	13,4		9,506	+2	257. 32. 7,15				35,87	70. 34. 2,29		B.
July 28	(f) ☉ S.L.....	2.19,7	17,1	17,2	19,5	16,6	14,5	+0,7			258. 12. 17,48	30,222	61,5	64,4	37,78	71. 14. 13,76		B.	
	α Herculis R....	3.24,6	22,5	23,8	25,5	22,6	22,2		12,046	-1	7. 7. 20,05	30,220	58,8	51,6	45,27	75. 26. 22,72		B.	
	α Herculis.....	0.20,6	19,1	17,6	22,6	19,1	16,8		12,046	+2½	262. 24. 16,01					75. 26. 19,78		B.	
July 29	(g) Zenith Point....	1.32,6	29,6	25,3	28,2	27,5	23,8		10,811		224. 45. 50,09							B.	
	(h) ☉ S.L.....	1.27,9	26,4	25,3	27,1	26,4	22,5		9,331		258. 26. 19,07	30,151	60,4	71,2	37,52	71. 28. 15,09		B.	
	☉ N.L.....	4.53,2	50,3	48,6	50,9	50,6	46,6		9,331		257. 54. 43,25				36,78	70. 56. 38,53		B.	
Aug. 1	(i) ζ Aquilæ R....	3.15,8	16,4	15,7	16,7	16,8	12,6		10,465		6. 12. 45,20	30,094	61,3	57,7	46,00	76. 20. 58,30		B.	
	ζ Aquilæ.....	4.22,0	21,1	21,9	22,7	20,4	18,3		10,465	+2½	263. 18. 50,83					76. 20. 55,33		B.	
Aug. 7	(k) Urania.....	0.54,5	53,0	52,6	53,6	56,0	48,1				293. 45. 52,98	29,658	59,4	54,4	148,11	106. 49. 39,59		B.	
	(l) Zenith Point....	1.33,8	33,1	30,1	34,4	33,5	30,4		11,065		224. 45. 49,50							B.	
Aug. 9	(m) ☉ N.L.....	4.21,5	19,0	21,9	21,4	21,0	12,9	-1,1	9,312	-1	260. 14. 13,20	30,032	58,2	61,3	40,76	73. 16. 12,46		C.	
	☉ S.L.....	0.55,4	54,4	52,0	56,3	56,6	50,4		9,312		260. 45. 47,64				41,56	73. 47. 47,70		C.	
Aug. 10	H. C. 40547....	1.24,4	25,4	24,0	23,8	22,2	23,1		5,000		294. 22. 47,19	29,852	60,2	56,3	153,30	107. 26. 25,19		C.	
Aug. 11	(n) ☉ S.L.....	1.34,0	33,1	33,5	32,3	31,9	34,2		6,348	+2	261. 37. 28,18				43,05	74. 39. 15,93		C.	
	(b) ☉ N.L.....	4.59,1	58,9	58,6	58,5	59,2	57,5		6,348	+3	261. 5. 53,69	29,800	61,3	70,3	41,00	74. 7. 39,39		C.	
Aug. 11	(o) ☉ N.L.....	2.47,5	48,7	48,0	45,9	47,9	46,6		6,751	-1	261. 23. 34,49	29,936	62,2	67,1	41,90	74. 25. 21,09		C.	
	Zenith Point....	1.33,2	35,0	31,6	32,9	31,8	35,4		10,437		224. 46. 3,30							C.	
	(p) Zenith Point....	1.33,5	38,5	31,6	34,4	33,9	35,6		10,791		224. 45. 57,18							C.	

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6. ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

Aug. 7, 22<sup>h</sup>, The Circle was taken from the wall and its axis cleaned. The microscopes were adjusted so as to point to the middle of the gold band, and their readings were then adjusted. The Run of Microscope F was altered.

Aug. 8, 10<sup>h</sup>, I ascertained that the micrometer-wire was equatorially adjusted.

Between Aug. 11, 8<sup>h</sup>, and Aug. 26, 3<sup>h</sup>, corrections are applied for error of position of the micrometer-wire. See Introduction.

(a) Bad definition. (b) Negative correction for Runs. (c) Mist. (d) Steady. (e) 'Very steady and good.' (f) N.L. clouded: this without the dark glass. (g) The mercury unsteady: this Zenith Point is not used. (h) Unusual motion. (i) Beautifully steady. (k) Doubtful observation, the Planet being very faint and disappearing from clouds passing. (l) The recorded reading was 1' less. (m) Ragged limbs. The microscope readings for N.L. were taken hurriedly, and the microscopes were not adjusted to my focus. Also the screen was not down, but the sun-shine was feeble. (n) Microscope E was set down 28,1: the mistake was rectified by re-setting the Circle. (o) Ragged; S.L. clouded. (p) After adjusting the wire-frame.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refracti- on.	Apparent N.P.D. from the Observation.			Observer.			
		A	B	C	D	E	F						Int.	Ext.		"	"	"		"	"	"
		"	"	"	"	"	"						"	"								
Aug.14	(a) ☉ S.L.....	4. 45,1	47,8	46,5	43,8	44,3	45,7	-1,1	9,747	+3	262. 49. 28,55	29,730	65,8	71,4	43,45	75. 51. 22,82	C.					
Aug.15	(b) Urania B. ....	1. 7,2	7,0	5,9	6,6	3,4	5,2		9,015	+2	294. 26. 3,94	29,838	57,0	50,1	155,64	107. 29. 50,40	C.					
	(c) H. C. 40507.....	3. 3,4	3,6	4,8	1,6	0,0	1,2		10,035		294. 22. 40,73				155,18	107. 26. 26,73	C.					
Aug.16	(d) ☉ S.L.....	3. 9,2	9,9	10,3	6,6	4,4	7,4		12,440		263. 26. 56,11	29,802	60,2	62,6	45,32	76. 28. 52,25	C.					
	☉ N.L.....	1. 32,5	32,0	33,6	31,4	29,4	31,0		12,440	+1½	262. 55. 19,13				44,48	75. 57. 14,43	C.					
Aug.17	(e) σ Capricorni. ....	4. 63,6	60,5	62,8	61,7	59,7	60,6				296. 30. 1,48	30,002	55,3	49,8	175,41	109. 34. 7,71	C.					
	(f) Urania B. ....	2. 4,8	2,0	4,2	3,7	1,3	2,2		11,546	+2	294. 31. 8,62				157,30	107. 34. 56,74	C.					
	H. C. 40391.....	0. 8,2	5,4	7,0	7,2	4,5	6,2		6,532		294. 35. 57,89				157,96	107. 39. 46,67	C.					
	(g) H. C. 40547.....	1. 47,4	45,7	48,2	47,0	44,8	45,5		6,532		294. 22. 37,84			49,6	156,19	107. 26. 24,85	C.					
Aug.18	(h) ☉ S.L.....	0. 14,7	12,7	14,8	13,8	12,4	14,4		9,198		264. 5. 9,67	30,102	58,2	63,0	46,79	77. 7. 7,28	C.					
Aug.19	(i) ☉ N.L.....	2. 61,3	56,7	61,9	58,6	57,5	61,4		8,756		263. 53. 4,54	30,090	62,3	69,5	45,84	76. 55. 1,20	C.					
	(e) ☉ S.L.....	4. 36,1	33,0	35,5	33,8	33,7	34,5		8,756	+2	264. 24. 38,60				46,71	77. 26. 36,13	C.					
Aug.21	o Cephei R. ....	1. 41,9	45,6	42,6	42,6	45,4	42,9	-3,5	9,120	-1	59. 51. 40,75	29,741	59,0	54,6	15,50	22. 41. 9,37	C.					
	o Cephei.....	0. 16,6	15,8	16,7	17,1	16,8	15,5		9,120	+1	209. 40. 13,93					22. 41. 8,81	C.					
	λ Andromedæ ...	3. 32,1	30,0	32,0	28,4	31,2	31,3			-2	231. 18. 31,65				6,59	44. 19. 48,62	C.					
	γ Cephei.....	0. 14,1	12,8	14,1	13,7	12,7	13,0			+½	200. 10. 13,38				26,29	13. 10. 57,47	C.					
Aug.22	H. C. 40391.....	0. 64,6	58,0	62,2	58,4	59,0	59,6				294. 36. 0,18	29,996	56,5	52,1	157,18	107. 39. 47,74	C.					
Aug.23	(e)(k)☉ S.L.....	4. 55,7	53,8	55,4	55,5	53,9	54,0		9,940	-2	265. 44. 36,35	30,076	60,2	65,0	49,37	78. 46. 36,10	C.					
	(k) ☉ N.L.....	3. 19,7	17,4	20,4	17,4	15,0	18,2		9,940		265. 12. 58,03				48,47	78. 14. 56,88	C.					
Aug.24	(l) ☉ N.L.....	3. 5,1	4,7	6,6	5,3	4,3	5,3		8,100	-2	265. 33. 24,85	29,860	64,6	68,2	48,39	78. 35. 23,62	C.					
	(e) ☉ S.L.....	4. 55,5	45,3	44,7	45,6	46,5	44,1		8,100		266. 5. 4,07				49,30	79. 7. 3,75	C.					
	(m) ζ Cygni.....	0. 26,5	21,3	24,0	24,0	25,8	25,6				247. 20. 24,25	29,926	60,0	57,9	23,87	60. 21. 58,50	T.					
	(n) γ Capricorni.....	0. 15,0	11,0	17,2	14,9	14,9	12,6				294. 15. 14,25		60,0	57,6	152,26	107. 18. 56,89	T.					
	(n) ζ Aquarii.....	3. 11,9	14,5	17,0	14,5	14,5	11,0				277. 43. 13,53				75,96	90. 45. 39,87	T.					
	ζ Pegasi.....	3. 32,0	29,4	33,6	29,5	30,6	30,9				266. 53. 30,60				51,91	79. 55. 32,89	T.					
	α Pegasi.....	2. 38,9	38,0	39,9	37,9	43,0	39,0				262. 32. 39,15	29,958	59,9	57,5	44,56	75. 34. 34,09	T.					
Aug.25	(o) ☉ S.L.....	0. 53,9	53,0	53,6	54,3	53,1	52,5		9,627	-2	266. 25. 41,45	30,214	61,3	63,6	50,95	79. 27. 42,78	C.					
	☉ N.L.....	4. 15,0	13,1	16,3	12,9	11,1	14,3		9,627		265. 54. 0,22				50,01	78. 56. 0,61	C.					
Aug.26	(p) ☉ N.L.....	0. 31,7	34,7	32,0	33,6	31,2	31,9		11,066	-1	266. 14. 49,97	30,346	63,2	68,1	50,40	79. 16. 50,75	C.					
	☉ S.L.....	2. 12,3	12,0	13,3	11,7	11,1	10,9		11,066	+1	266. 46. 28,01				51,34	79. 48. 29,73	C.					
	Zenith Point. ....	0. 56,4	58,1	54,3	56,2	56,0	58,1		8,942		224. 45. 57,62						C.					
Aug.28	☉ S.L.....	3. 30,4	32,4	31,3	29,9	28,2	29,9		8,803		267. 28. 34,06	30,444	66,3	74,8	52,09	80. 30. 33,66	B.					
	☉ N.L.....	1. 48,1	52,7	48,2	49,4	49,1	48,9		8,803		266. 56. 53,29				51,14	79. 58. 51,94	B.					
	H. C. 40391.....	0. 60,0	62,1	58,4	59,9	59,2	59,5				294. 35. 59,73	30,432	65,3	62,0	156,28	107. 39. 43,52	B.					
	H. C. 41078.....	1. 51,4	54,4	50,3	50,4	51,6	50,7				298. 31. 51,25				195,09	111. 36. 14,85	B.					
	B.A.C. 7378.....	2. 14,0	17,9	14,2	13,9	13,3	15,3				297. 42. 14,52				186,30	110. 46. 28,33	B.					
	H. C. 41580.....	0. 50,1	52,2	49,0	50,6	50,3	49,8				289. 20. 50,23				121,20	102. 23. 58,94	B.					
	(q) B. (w.) XXI. 493.	0. 45,5	49,4	45,0	46,3	46,9	45,4				287. 50. 46,33	30,432	65,2	61,3	113,67	100. 53. 47,51	B.					
	(e)(r)B. (w.) XXI. 696.	4. 21,9	25,4	20,3	22,2	21,2	20,7				290. 24. 22,03				127,32	103. 27. 36,86	B.					
	B. (w.) XXI. 828.	3. 55,6	59,6	53,1	54,4	54,6	54,9				289. 38. 54,92				123,02	102. 42. 5,45	B.					
	B. (w.) XXI. 835.	...	...	...	...	...	...		17,854		289. 35. 50,26				122,74	102. 39. 0,51	B.					
	(e) Neptune.....	4. 1,0	4,9	0,8	2,4	2,3	1,1		9,003	+2½	283. 54. 2,12				97,21	96. 56. 46,84	B.					
Aug.29	(s) (e) ☉ N.L.....	4. 5,3	9,2	4,8	9,2	5,9	4,8		11,830		267. 18. 7,61	30,414	66,3	75,2	51,68	80. 20. 6,80	B.					
	☉ S.L.....	0. 52,5	57,8	51,2	54,6	53,5	52,8		11,830		267. 49. 54,61				52,65	80. 51. 54,77	B.					
	B. (w.) XXII. 345.	4. 3,9	4,2	4,2	1,1	1,4	3,4		9,009		287. 29. 2,38	30,301	64,8	59,6	111,83	100. 32. 1,72	B.					
	B. (w.) XXII. 519.	0. 5,2	5,6	3,6	4,3	2,8	4,7		9,009		284. 10. 4,18				97,64	97. 12. 49,33	B.					

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Ragged and observed hurriedly. Microscope F being accidentally displaced was read off after re-setting the Circle. (b) Mist on the eye-glass.  
 Reduction to wire-reading = + 0",045. (c) On the fixed wire: coincidence taken at the time. (d) Ragged; also eye-glass out of focus. (e) Negative correction for Runs. (f) The Circle reading has been increased 2' conjecturally. Reduction to wire-reading = + 0",031. (g) The Circle reading was 2' greater. (h) Doubtfully without the dark glass. (i) The negative division having been accidentally bisected by Microscope D, its reading was corrected by - 0",4, after finding its Run on replacing the Circle. (k) Very close to the fixed wire. (l) The reading of Microscope F was set down 11,0, but after replacing the Circle as nearly as possible, it was found to be 5,3. Probably the micrometer-head was accidentally touched. (m) The observations marked T were taken for trial by Mr Henry Todd. (n) 'Good bisection.' (o) Both Limbs very ragged and unsteady. (p) Motion. (q) 'One of Mag. 10 south-following about 5°.' (r) Very faint. 'No star near this.' (s) Serrated Limbs and very unsteady.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.											
		A	B	C	D	E	F						Int.	Ext.		"	"	"												
		"	"	"	"	"	"						"	"						"	"	"	"							
Aug.29	(a) B. (w.) xxii. 608.	0.27,6	27,9	26,5	27,8	25,8	27,8	-3,5	8,129	+1½	287. 5. 45,29	30,301	64,8	59,6	110,01	100. 8. 42,81	B.													
	(b) B. (w.) xxii. 612.	...	...	...	...	...	...				287. 5. 27,18																			
	H. C. 44506.....	3.53,4	55,6	54,4	52,3	52,2	53,6				278. 53. 53,13																			
	B. (w.) xxii. 933	1.42,0	44,0	42,3	42,8	42,3	42,5				287. 46. 42,45																			
	B. (w.) xxii. 1029	2.36,5	38,6	37,8	35,8	34,5	36,3				284. 32. 36,28																			
	(c)(d) Proserpine B....	3.50,6	51,1	51,2	49,3	49,3	49,8				289. 38. 46,31																			
	Neptune.....	4.38,0	40,1	39,9	36,5	36,4	39,3				283. 54. 37,83																			
Aug.30	(e) ☉ S.L.....	0.21,9	28,4	21,4	24,2	22,3	22,2	-2,2	6,223	+2½	268. 11. 21,29	30,222	68,8	75,4	52,95	81. 13. 21,75	B.													
	☉ N.L.....	3.39,6	45,1	40,5	40,6	39,5	39,9				267. 39. 38,52																			
	B.A.C. 6707.....	1.18,2	21,9	17,4	18,3	17,8	17,5				296. 6. 18,42																			
	B.A.C. 6773.....	4.27,8	32,6	29,4	27,6	27,4	28,8				298. 14. 28,60																			
	H. C. 41177.....	0.60,8	63,9	59,9	62,6	60,3	61,8				297. 36. 1,48																			
	H. C. 41400.....	3.30,0	33,1	31,1	30,3	29,3	29,1				291. 3. 30,23																			
	H. C. 41544.....	2.35,6	38,9	35,6	34,9	34,8	34,8				289. 37. 35,58																			
	(f) B. (w.) xxi. 493..	0.48,2	52,2	47,6	49,9	50,5	49,1				287. 50. 49,52																			
	B.A.C. 7487.....	4.17,2	21,4	18,6	16,7	15,4	18,3				291. 4. 17,62																			
	B.A.C. 7804.....	2.51,2	56,2	52,2	50,1	52,2	51,2				284. 52. 51,84																			
	(g) B. (w.) xxi. 459.	2.41,6	45,6	41,9	41,0	41,1	40,9				289. 12. 41,82																			
	B. (w.) xxii. 589.	2.32,3	35,9	33,5	31,9	31,7	32,3				285. 2. 32,75																			
	(h) B.A.C. 7892 sf...	3.37,2	39,6	36,9	35,0	34,6	36,5				290. 18. 36,37																			
	H. C. 44506.....	3.55,2	58,5	56,6	54,4	54,2	54,9				278. 53. 55,35																			
	B. (w.) xxii. 918.	0.57,7	7,7	3,6	5,3	4,4	3,3				289. 45. 5,00																			
	(c)(i) Proserpine B....	4.24,8	27,8	23,3	24,8	23,8	23,0				289. 43. 33,34																			
	(c) * R. 22h.53m.49s B.	...	...	...	...	...	...				289. 46. 12,31																			
	Neptune.....	0.18,0	21,3	17,6	17,7	17,6	18,3				283. 55. 18,40																			
	Aug.31	(k) ☉ S.L.....	2.44,6	48,4	45,6	44,6	44,8				44,5									8,585	8,585	+4	268. 32. 53,88	30,208	63,9	54,83	81. 34. 56,22	B.		
		(l) ☉ N.L.....	0.61,4	64,9	60,4	62,6	59,8				61,4												268. 1. 9,70							
		B.A.C. 6485.....	4. 6,5	6,4	6,4	3,1	1,7				4,5												299. 49. 3,78							
		(m) H. C. 35773.....	0.34,9	34,3	33,3	32,7	29,8				32,6												295. 50. 32,57							
		(n) H. C. 36104.....	0.40,0	38,5	38,8	36,7	35,5				37,3												299. 0. 37,75							
		H. C. 36426.....	3.40,9	41,8	41,0	38,2	36,2				39,3												296. 13. 39,30							
		H. C. 36666.....	4.23,9	24,9	26,2	21,3	19,6				22,8												295. 34. 22,80							
		B.A.C. 6658.....	...	...	...	...	...				...												295. 35. 1,22							
H. C. 36999.....		0.49,6	48,6	48,0	48,9	46,2	46,1	296. 0. 47,83																						
H. C. 38081.....		0.36,8	37,0	36,1	34,4	33,4	34,3	298. 10. 35,28																						
(o)(i) B. (w.) xxi. 1227		4.25,6	25,5	24,4	23,8	21,7	23,6	290. 34. 24,15																						
B. (w.) xxii. 231.		3.36,1	37,5	36,5	33,9	31,5	35,3	287. 28. 34,87																						
B.A.C. 7804.....		2.49,1	50,9	50,7	47,3	46,4	47,6	284. 52. 48,47																						
(p) B.A.C. 7892 np...		3.30,5	28,0	30,9	26,6	23,4	28,6	290. 18. 27,75																						
B. (w.) xxii. 747.		3.24,8	23,2	25,7	21,6	18,4	23,6	290. 3. 22,63																						
(q) B.A.C. 7951 nf...		1.13,9	12,5	13,3	12,0	8,4	12,9	281. 56. 12,08																						
(i) B. (w.) xxii. 918.		4.59,1	57,1	58,7	56,3	54,4	55,6	289. 44. 56,87																						
(c) Proserpine B....		3.62,2	59,2	61,0	59,7	57,3	58,5	289. 48. 8,54																						
* R. 22h.52m.59s.		...	...	...	...	...	...	289. 49. 8,81																						
Neptune.....		0.54,0	52,0	54,2	52,3	51,2	52,6	283. 55. 52,65																						
Sept. 1	(r) δ Ursæ Minoris R.	4.14,9	18,0	16,5	14,4	11,5	15,0	10,523	-1	79. 8. 39,63	30,304	62,4	57,0	39,83	3.23.49,03	C.														
	(r) δ Ursæ Minoris..	3.53,8	55,5	55,4	49,9	51,4	51,6	10,523	-¾	190. 23. 23,32					3.23.51,00	C.														
	(r) 51 (H.) Cepheisp.R.	2. 4,3	5,6	5,0	3,1	2,5	3,9	8,484	+1½	85. 17. 18,36			56,0	49,85	-2.44.59,72	C.														
	(r) 51 (Hev.) Cepheisp.	4.40,6	42,2	42,9	38,3	38,2	40,5	8,484	+1½	184. 14. 45,31					-2.44.57,03	C.														
	(s) ε Aquilæ R.....	0.26,7	29,1	27,3	27,8	25,8	24,6	6,213		7.26.24,98	30,289	61,0	55,2	44,53	75. 7. 28,04	C.														
	ε Aquilæ.....	4.36,5	39,1	38,7	34,4	34,4	35,9	6,213		262. 5. 34,30					75. 7. 26,34	C.														
	H. C. 36239.....	3.25,7	24,8	26,9	22,9	21,7	24,5			295. 53. 24,17			54,8	169,31	108. 57. 20,99	C.														
	(t) H. C. 36259.....	...	...	...	...	...	...	2,070		295. 55. 48,70				169,69	108. 59. 45,90	C.														
	B.A.C. 6666.....	0.40,6	40,5	39,4	42,4	37,4	37,7			304. 10. 39,62	30,320		54,6	303,40	117. 16. 50,53	C.														
	h² Sagittarii.....	1.42,3	43,4	43,0	41,6	40,5	40,5			302. 6. 41,77				254,96	115. 12. 4,24	C.														
e² Sagittarii.....	4. 3,2	5,7	5,4	1,2	0,6	2,4			293. 24. 2,10				148,54	106. 27. 38,85	C.															



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.			
		A	B	C	D	E	F						Int.	Ext.		o	o	"		o	"	"
Sept. 1	$\beta$ Aquilæ R. ....	0.39,0	41,6	41,9	39,8	40,0	39,8	-2,2	5,119	-2	358.37. 1,18	30,320	61,0	54,6	60,89	83.57. 8,20	C.					
	$\beta$ Aquilæ. ....	3.37,6	40,3	39,2	36,6	33,6	38,6		5,119	+2	270.54. 58,38					83.57. 6,78	C.					
	(a) $\alpha^1$ Capricorni. ....	3.62,4	63,4	64,1	59,2	58,4	60,2				289.54. 0,98	30,328	59,4	52,5	126,24	102.57. 14,73	C.					
	$\alpha^2$ Capricorni. ....	...	...	...	...	...	...		2,497		289.56. 16,61				126,44	102.59. 30,56	C.					
	B. (w.) xx. 588..	2.24,3	24,2	24,6	21,6	19,7	23,0				291.12. 22,72			52,0	134,20	104.15. 44,43	C.					
	$\mu$ Capricorni. ....	0.41,0	40,0	39,5	39,0	36,4	39,4				291.10. 39,17	30,334	56,8	49,8	134,66	104.14. 1,34	C.					
	H. C. 42891. ....	0.17,9	17,5	15,7	16,1	12,6	15,9				286.10. 15,93				108,11	99.13. 11,55	C.					
	$\epsilon^2$ Aquarii. ....	3.31,5	28,5	30,6	27,8	24,2	28,3				289.13. 28,23			49,3	123,29	102.16. 39,03	C.					
	$\zeta$ Pegasi. ....	3.32,9	31,2	33,0	29,5	26,7	30,1			+2	266.53. 30,43	30,326		47,8	53,66	79.55. 31,60	C.					
	(b)(c) Proserpine B. ....	0.45,9	42,7	44,5	42,2	39,8	42,8		12,863	+3	289.52. 50,26	30,324	54,0	47,9	127,30	102.56. 5,07	C.					
	Neptune. ....	1.36,6	33,5	35,6	32,8	29,7	34,2			+1	283.56. 33,59				99,18	96.59. 20,28	C.					
Sept. 2	(d) $\odot$ S.L. ....	2.31,5	34,0	32,0	29,0	29,4	28,7		12,050		269.16. 26,97	30,364	61,5	69,0	55,95	82.18. 30,43	C.					
	$\odot$ N.L. ....	0.43,9	46,4	46,7	44,4	44,7	42,6		12,050	+1	268.44. 40,88				54,93	81.46. 43,32	C.					
	(e) $\delta$ Ursæ Minoris R. ....	4.49,8	54,0	53,3	50,1	50,8	50,2		12,242		79. 8. 40,01	30,380	63,5	60,1	39,68	3.23. 48,80	C.					
	(e) $\delta$ Ursæ Minoris. ....	4.39,0	31,6	31,0	27,0	28,4	28,9		12,242		190.23. 22,68					3.23. 50,51	C.					
	(e) 51 (H.) Cephei sp. R. ....	2. 8,4	10,4	8,6	7,4	7,7	6,8		8,420	-1	85.17. 20,29				49,56	-2.45. 1,36	C.					
	(e) 51 (H.) Cephei SP. ....	4.32,6	34,0	33,9	32,1	30,5	33,2		8,420	+2	184.14. 42,86					-2.44. 59,19	C.					
	$\beta$ Lyræ. ....	1.35,8	35,0	33,4	33,6	33,3	34,0				243.46. 34,07			59,1	20,03	56.48. 1,61	C.					
	$\zeta$ Aquilæ R. ....	2. 7,8	11,1	9,5	8,2	7,6	3,0		6,475	-1	6.13. 0,30	30,374	62,7	58,5	46,35	76.20. 54,54	C.					
	$\zeta$ Aquilæ. ....	3. 4,5	5,6	5,7	3,5	2,2	4,0		6,475	+2	263.18. 56,83					76.20. 50,69	C.					
	$\gamma$ Aquilæ R. ....	4.14,6	17,8	17,4	13,3	13,6	13,8		7,430	-1	182.49. 47,49	30,384	61,0	55,7	52,56	79.44. 13,56	C.					
	$\gamma$ Aquilæ. ....	1.39,5	38,2	39,4	36,6	38,5	37,6		7,430	+2	266.42. 11,05					79.44. 11,12	C.					
	H. C. 38086. ....	1.16,2	15,0	17,5	13,7	13,6	15,4				303.31. 15,13				286,19	116.37. 8,83	C.					
	H. C. 38367. ....	4.16,7	16,5	18,4	12,4	11,3	13,6				295.39. 14,52	30,380	60,5	55,0	167,53	108.43. 9,56	C.					
	H. C. 38782. ....	2. 3,9	2,9	4,2	0,0	0,4	1,1				300.52. 1,93				232,49	113.57. 1,93	C.					
	B.A.C. 7019. ....	4.58,3	58,6	60,5	55,5	55,7	57,4				296.49. 57,30			54,3	179,38	109.54. 4,19	C.					
	(c)(f) B. (w.) xx. 566 B. ....	0. 6,1	5,3	5,5	4,3	3,4	2,9		7,200	+2	291. 0. 41,46				132,59	104. 4. 1,56	C.					
	$\theta$ Aquarii. ....	2.27,1	27,8	26,5	25,3	22,7	25,6				285.27. 25,65				104,19	98.30. 17,35	C.					
	$\rho$ Aquarii. ....	0. 2,7	3,2	3,4	0,6	0,7	1,6				285.30. 2,03	30,370	57,6	51,3	104,99	98.32. 54,53	C.					
	(c)(g) B. (w.) xxii. 479 B. ....	3. 4,4	5,0	6,0	3,0	1,0	5,0		3,775	+3	285.24. 52,16				104,62	98.27. 44,29	C.					
	(c) Proserpine B. ....	1.11,7	10,5	11,1	9,2	7,7	8,7		5,303	+1	289.57. 25,99	30,366	57,0	50,4	127,26	103. 0. 40,76	C.					
	(h) Neptune. ....	2.13,6	13,3	13,7	11,4	10,6	12,0				283.57. 12,27			50,2	98,89	96.59. 58,67	C.					
Sept. 4	(i) $\odot$ N.L. ....	4.46,8	49,3	48,0	44,3	46,4	46,4		12,048	-1	269.28. 43,23	30,326	63,5	72,3	55,91	82.30. 46,65	C.					
	$\odot$ S.L. ....	0.54,1	58,2	54,5	54,6	55,0	52,5		10,044	+1	270. 0. 32,74				56,95	83. 2. 37,20	C.					
	(k) Polaris SP. ....	1.29,5	33,0	28,6	29,5	30,9	27,7				185.31. 29,73	30,310	65,7	76,3	45,76	-1.28. 8,52	C.					
	(k) $\delta$ Ursæ Minoris R. ....	3.60,6	64,2	63,4	56,3	62,5	58,6		9,365	-2	79. 8. 41,40	30,320	66,6	65,0	39,22	3.23. 47,81	C.					
	(k) $\delta$ Ursæ Minoris. ....	3.35,8	28,4	26,8	23,8	27,8	26,0		9,365	-1	190.23. 21,91				39,23	3.23. 48,19	C.					
	(k) 51 (H.) Cephei sp. R. ....	2.14,9	18,0	15,6	13,0	14,9	13,8		8,690		85.17. 21,38				48,99	-2.45. 1,88	C.					
	(k)(l) 51 (H.) Cephei sp. ....	4.34,4	38,7	36,2	31,7	34,3	35,0		8,690		184.14. 40,85					-2.45. 0,63	C.					
	$\epsilon$ Aquilæ R. ....	0.23,0	25,1	24,5	23,2	24,9	23,8		6,097	-2	7.26. 24,45	30,330	65,8	62,6	43,93	75. 7. 27,97	C.					
	$\epsilon$ Aquilæ. ....	4.35,2	38,0	36,1	33,3	35,4	35,6		6,097	+2	262. 5. 35,97					75. 7. 27,41	C.					
	$\chi^8$ Sagittarii. ....	4.38,5	38,9	39,4	33,3	35,0	36,1				301. 9. 36,53				233,55	114.14. 37,59	C.					
	H. C. 36828. ....	4.23,0	26,7	25,0	19,9	23,6	22,0				293.24. 23,05	30,336		61,2	146,68	106.27. 57,24	C.					
	B.A.C. 6707. ....	1.17,0	20,8	16,3	15,3	16,0	15,3			2	296. 6. 16,47				169,39	109.10. 13,37	C.					
	(m) $\gamma$ Aquilæ R. ....	4.23,7	27,4	27,5	23,9	27,1	25,7		7,960	+1	2.49. 47,25				51,90	79.44. 13,14	C.					
	$\gamma$ Aquilæ. ....	1.49,6	52,2	51,2	48,4	51,9	48,3		7,960	+3	266.42. 12,07					79.44. 11,48	C.					
	$\beta$ Aquilæ. ....	4.59,4	60,0	60,6	53,7	58,8	57,9				270.54. 58,03			58,9	60,88	83.57. 5,92	C.					
	H. C. 38618. ....	0. 7,6	8,6	7,4	6,8	7,0	4,8		12,747	+1	302. 8. 48,86				253,52	115.14. 9,89	C.					
	(n) H. C. 38635 B. ....	...	...	...	...	...	...		1,923	+2	302.12. 33,56				254,77	115.17. 55,84	C.					
	B.A.C. 7019. ....	0. 2,2	3,8	0,8	0,6	1,3	0,1				296.50. 1,47	30,332	63,6	58,7	177,51	109.54. 6,49	C.					
	(o) B. (w.) xx. 588..	2.25,1	26,6	25,0	23,7	23,6	22,5				291.12. 24,23				132,41	104.15. 44,15	C.					
	$\delta$ Equulei. ....	2.41,6	43,3	42,4	39,6	37,8	40,3				267.32. 40,63	30,348	61,7	55,4	54,10	80.34. 42,24	C.					
	(n) B. (w.) xxi. 502 B. ....	3.24,8	25,9	24,4	21,5	22,3	23,5		5,197		290. 4. 42,00			55,3	126,62	103. 7. 56,13	C.					
	(n)(p) Proserpine B. ....	4.42,4	44,0	44,1	39,3	39,6	40,8		4,270	+1	290. 6. 19,12	30,352	58,7	51,8	127,70	103. 9. 34,32	C.					
	Neptune. ....	3.29,7	31,4	32,1	27,6	29,2	30,5				283.58. 29,83				98,61	97. 1. 15,95	C.					
	(q) Zenith Point. ....	1.11,4	14,6	10,3	11,9	11,0	12,0		9,542		224.46. 0,49			62,5			C.					

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) The Circle reading has been decreased 1'. (b) 'No object near this.' (c) Reduction to wire-reading = +0",031. (d) This Limb very uneven.  
 (e) Times of bisection by Molyneux, 18h.13m.40s, 18h.15m.55s, 18h.23m.5s and 18h.34m.22s. M fast on 11, 17s. The reductions to the meridian for 51 (Hev.) Cephei were found by special calculation to be +0",12 and -1",62. (f) 'Another of equal Mag. northward.' (g) 'Another brighter, of considerably less N.P.D.'  
 (h) 'Good bisection.' (i) Very tremulous. S.L. is assumed to be taken on the fixed wire, the coincidence reading for which is inferred from measures taken on Sept. 2 and 4. (k) Times of bisection by Molyneux, 13h.6m.46s, 18h.3m.55s, 18h.13m.33s, 18h.30m.45s, and 18h.32m.0s. M fast on 11, 12s. The corrections specially calculated for 51 (Hev.) Cephei are +0",04 and -0",34. (l) 'Good, the star being very steady.' (m) Great motion. (n) Reduction to wire-reading = +0",038. (o) Faint. (p) Extremely faint. (q) Used from Aug. 28, Mr Breen having omitted to take the Zenith Point.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac-tion.	Apparent N.P.D. from the Observation.			Observer.	
		A	B	C	D	E	F						Int.	Ext.		"				
		"	"	"	"	"	"						"	"		"	"	"		"
Sept. 5	(a) $\delta$ Ursæ Minoris R.	3. 59,6	1,2	0,9	59,0	58,2	58,8	-2,2	9,836		79. 8. 39,59	30,440	62,8	58,6	39,88	3. 23. 49,02			C.	
	(a)(b) $\delta$ Ursæ Minoris.	3. 40,0	41,1	42,0	38,2	40,6	38,1		9,836	- $\frac{1}{2}$	190. 23. 23,24					3. 23. 50,87			C.	
	(a)(c) 51(H.) Cephe.sp.R.	2. 4,8	4,9	4,6	4,6	3,2	5,0		8,249		85. 17. 20,14		57,4	49,93	-2. 45. 1,58			C.		
	(a)(c) 51(H.) Cephe.sp.	4. 26,7	27,2	28,6	25,0	22,7	25,6		8,249		184. 14. 40,10				-2. 45. 2,32			C.		
	(d) $\gamma$ Lyræ R.	2. 59,4	60,7	60,9	57,7	59,5	60,4		8,337	-1 $\frac{1}{2}$	25. 3. 13,16	30,444	61,5	56,2	21,00	57. 30. 16,33			C.	
	$\gamma$ Lyræ	3. 34,8	35,6	34,1	31,1	30,5	32,3		8,337	+1 $\frac{1}{2}$	244. 28. 46,85				57. 30. 15,36			C.		
	(e) B. (w.) XIX. 1418 B.	1. 53,5	51,9	51,7	50,3	49,6	50,5		6,845		291. 57. 35,48		53,5	139,20	105. 1. 2,19			C.		
	H. C. 38618	0. 34,1	33,6	34,7	33,6	32,9	33,0		14,299		302. 8. 43,08				257,27	115. 14. 7,86			C.	
	(e) H. C. 38635 B.	...	...	...	...	...	...		3,389	+1	302. 12. 29,97				258,55	115. 17. 56,03			C.	
	B.A.C. 6992	0. 56,3	55,8	55,7	55,4	54,2	54,2				292. 10. 55,20				140,72	105. 14. 23,43			C.	
	$\beta$ Capricorni	...	...	...	...	...	...		9,447		292. 10. 45,88				140,70	105. 14. 14,09			C.	
	B.A.C. 7053	4. 54,8	52,7	55,9	50,6	50,4	51,6				295. 59. 52,30	30,443	58,9	52,9	171,87	109. 3. 51,68			C.	
	$\alpha$ Capricorni	...	...	...	...	...	...		9,619		295. 59. 39,39				171,82	109. 3. 38,72			C.	
	H. C. 40019	3. 39,4	39,2	39,6	36,5	35,3	37,6		7,920	+ $\frac{1}{2}$	291. 39. 0,18				137,33	104. 42. 25,02			C.	
	B. (w.) XXI. 170	1. 39,4	38,4	38,5	36,8	34,5	38,4				290. 41. 37,55	30,439	57,9	51,7	131,60	103. 44. 56,66			C.	
	$\eta$ Capricorni	1. 23,4	22,8	23,0	21,7	18,6	21,7				297. 21. 21,77		51,1	186,59	110. 25. 35,87			C.		
	$\nu$ Aquarii	4. 18,8	16,5	17,9	15,3	13,7	17,4				288. 54. 16,28				121,53	101. 57. 25,32			C.	
	Neptune	4. 9,5	10,9	11,1	7,2	3,9	8,5				283. 59. 8,22		48,9	99,49	97. 1. 55,22			C.		
Sept. 6	(f) $\odot$ S.L.	0. 38,6	39,7	38,3	39,6	38,2	38,1		10,791	-1	270. 45. 1,62	30,334	60,0	64,5	59,37	83. 47. 8,50			C.	
	$\odot$ N.L.	3. 51,1	53,3	52,6	49,3	48,0	47,7		10,791	+1 $\frac{1}{4}$	270. 13. 12,39				58,28	83. 15. 18,18			C.	
	(g) $\delta$ Ursæ Minoris R.	4. 21,4	23,5	24,4	21,4	21,4	23,3		10,924		79. 8. 38,30				39,27	3. 23. 50,92			C.	
	(g) $\delta$ Ursæ Minoris	3. 54,8	55,6	56,5	52,1	52,3	53,9		10,924		190. 23. 20,62					3. 23. 48,86			C.	
	$\beta$ Lyræ R.	0. 44,6	46,2	43,8	45,1	45,2	44,8		9,946		25. 45. 25,17		62,1	19,88	56. 48. 3,20				C.	
	$\beta$ Lyræ	1. 53,3	52,1	51,9	51,0	51,3	51,2		9,946	+2	243. 46. 32,34				56. 47. 59,73				C.	
	(i) $\zeta$ Aquilæ R.	2. 3,9	7,0	5,2	5,4	5,4	3,7		6,278	-2	6. 13. 1,58	30,257	60,7	45,97	76. 20. 52,88				C.	
	(k) $\zeta$ Aquilæ	2. 61,4	62,0	63,1	60,8	58,4	60,9		6,278	-1	263. 18. 57,61				76. 20. 51,09				C.	
	$\pi$ Draconis R.	4. 37,0	41,3	39,0	37,4	37,2	37,5		10,211	-1	57. 59. 12,31		62,6	59,6	13,59	24. 33. 42,59				C.
	(l) $\pi$ Draconis	3. 16,1	15,9	16,4	13,5	13,4	14,8		10,211	+1	211. 32. 49,85				24. 33. 43,77				C.	
	$\kappa$ Aquilæ	3. 3,6	4,9	5,0	2,6	1,0	3,0				284. 18. 3,12				98,01	97. 20. 48,64			C.	
	H. C. 39247	3. 34,7	35,3	35,6	31,6	30,5	34,2				292. 23. 33,38	30,250	61,6	56,4	140,43	105. 27. 1,32			C.	
	B. (w.) XX. 588	2. 23,9	24,2	24,5	22,4	20,4	23,8				291. 12. 23,02				132,66	104. 15. 43,19			C.	
	(m) B. (w.) XX. 731	0. 13,0	11,8	11,8	9,9	9,4	10,2				290. 20. 11,00		55,6	127,63	103. 23. 26,14				C.	
	$\psi$ Capricorni	1. 54,0	53,9	54,8	52,0	51,0	51,0				302. 41. 52,65	30,246	60,2	55,5	266,03	115. 47. 26,19			C.	
	(n) H. C. 40260	0. 14,5	14,2	14,4	14,2	11,5	12,3				297. 0. 13,50				179,94	110. 4. 20,95			C.	
	(e) A. (o) 20914 B.	...	...	...	...	...	...		2,165	+1	297. 2. 35,42				180,36	110. 6. 43,29			C.	
	$\eta$ Capricorni	1. 26,0	26,3	27,0	25,1	23,8	25,3				297. 21. 25,48		55,4	183,79	110. 25. 36,78				C.	
	(e)(k) A. (o.) 21401 B.	0. 60,4	59,9	60,9	59,0	58,0	59,4		89,157	+2	297. 49. 23,73	30,240	59,0	54,4	189,40	110. 53. 40,64			C.	
A. (o.) 21400	...	...	...	...	...	...				297. 45. 59,53				188,74	110. 50. 15,78			C.		
$\alpha$ Andromedæ	0. 57,0	53,5	55,5	52,9	53,9	55,8				235. 25. 54,70	30,238	56,8	52,1	11,05	48. 27. 13,26			C.		
(o) Neptune	4. 47,3	48,2	50,8	44,1	44,9	46,8				283. 59. 46,67				98,26	97. 2. 32,44			C.		
$\tau$ Pegasi	1. 34,0	32,5	35,0	30,9	32,4	34,0				254. 1. 33,02				32,88	67. 3. 13,41			C.		
Sept. 8	(p) $\odot$ N.L.	4. 9,1	11,6	10,9	6,4	6,0	7,7	+0,1	11,910	-1	270. 58. 8,21	30,205	60,6	62,3	59,83	84. 0. 14,99			C.	
	$\odot$ S.L.	0. 57,6	61,1	59,0	56,9	55,6	55,3		11,910	+1	271. 29. 56,64				60,95	84. 32. 4,54			C.	
Sept. 9	(q) $\odot$ S.L.	3. 42,8	45,3	44,8	40,9	40,7	41,1		12,119	- $\frac{1}{4}$	271. 52. 37,64	30,169	60,0	63,3	61,56	84. 54. 46,15			C.	
	$\odot$ N.L.	1. 50,0	50,8	50,7	48,0	47,9	46,9		12,119		271. 20. 43,64				60,43	84. 22. 51,02			C.	
	(r) $\delta$ Ursæ Minoris R.	4. 36,9	41,5	40,5	37,6	36,2	36,6		11,597		79. 8. 41,89	30,150	58,6	53,5	39,91	3. 23. 47,25			C.	
	(r) $\delta$ Ursæ Minoris	4. 16,4	17,2	19,0	14,2	14,1	16,0		11,597		190. 23. 22,87					3. 23. 49,91			C.	
	(r)(s) 51(H.) Cephe.sp.R.	2. 0,6	4,6	2,8	2,4	1,4	1,1		8,223		85. 17. 23,17	30,148	52,4	49,96	-2. 45. 4,08				C.	
	(r)(s) 51(H.) Cephe.sp.	4. 34,9	36,5	39,2	35,0	33,3	35,0		8,223		184. 14. 42,53					-2. 45. 0,48			C.	
	$\zeta$ Aquilæ R.	2. 20,8	25,8	23,6	20,9	21,9	21,0		7,036	-2	6. 13. 3,15		52,1	46,61	76. 20. 52,51				C.	
	$\zeta$ Aquilæ	3. 17,9	19,5	21,7	15,3	14,3	17,3		7,036	+2	263. 18. 58,78				76. 20. 52,34				C.	
	(t) B.A.C. 7009 B.	0. 17,9	23,0	21,4	20,8	17,9	20,0		86,317		291. 39. 44,17	30,169	56,9	50,4	136,87	104. 43. 7,99			C.	
	B.A.C. 7016	...	...	...	...	...	...		20,558	+1 $\frac{1}{2}$	291. 31. 19,21				135,96	104. 34. 42,12			C.	
	B. (w.) XX. 648	4. 39,9	42,1	41,4	37,1	37,4	38,8				290. 49. 39,47		50,0	131,70	103. 52. 58,12				C.	
	B. (w.) XX. 811	2. 58,9	61,2	60,3	57,6	56,1	56,6				291. 27. 58,47				135,71	104. 31. 21,13			C.	
$\psi$ Capricorni	1. 52,0	52,9	53,0	50,0	49,6	50,6				302. 41. 51,35	30,174	56,9	49,6	268,68	115. 47. 27,01			C.		

ONE REVOLUTION of the MICROMETER = 20",856.

ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.

ASSUMED CO-LATITUDE = 37°. 47'. 8",00.

(a) Times by Molyneux, 18h. 14m. 26s, 18h. 16m. 0s, 18h. 31m. 11s, and 18h. 33m. 40s. M fast on H, 11s. (b) Very unsteady. (c) The corrections applied for curvature of path are +0",11 and -1",21. (d) Unsteady. (e) Reduction to wire-reading = +0",028. (f) The limbs very sharp and steady. (g) Times by Molyneux, 18h. 24m. 30s and 18h. 26m. 25s. M fast on H, 8s. (h) Too near the fixed wire. (i) Steady. (k) The Circle reading has been diminished 1'. (l) 'Very good.' (m) Extremely faint. (n) 'The preceding star.' (o) 'Bright.' (p) Tremulous. (q) Ragged and unsteady. (r) Times by Molyneux, 18h. 14m. 14s, 18h. 15m. 50s, 18h. 36m. 58s, and 18h. 39m. 47s. M fast on H, 1s. (s) The corrections applied are +4",79 and -9",35. (t) Reduction to wire-reading = +0",025.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.		"	"	"	
		"	"	"	"	"	"						"	"					
Sept. 9	B.A.C. 7238.....	1.28,2	30,4	29,0	27,6	26,4	28,4	+0,1			290.41.28,32	30,174	56,0	49,6	131,01	103.44.46,29	C.		
	B. (w.) XII. 1278	2.32,0	34,9	32,3	30,8	29,0	30,1				289.27.31,53				123,86	102.30.42,34	C.		
	η Capricorni.....	1.25,5	26,3	25,0	24,4	22,6	24,9				297.21.24,78			48,9	185,83	110.25.37,56	C.		
	B. (w.) XXI. 456..	0.20,4	22,1	21,0	21,0	18,3	20,8				291.0.20,60	30,166			48,6	133,17	104.3.40,72	C.	
	κ Capricorni.....	2.31,2	34,4	30,7	31,0	26,6	29,4				296.27.30,57		54,0		176,38	109.31.33,90	C.		
	B. (w.) XXI. 966..	0.43,2	44,0	41,8	41,7	40,1	41,4				289.45.42,03				125,78	102.48.54,76	C.		
	(a) B. (w.) XXI. 967 B.	...	...	...	...	...	...		5,275	+2	289.46.58,46				125,90	102.50.11,31	C.		
	B. (w.) XXI. 1146.	3.56,1	58,2	56,9	55,0	53,9	55,4				290.58.55,93			48,3	133,10	104.2.15,98	C.		
	H. C. 42928.....	1.19,3	20,6	19,2	18,8	17,0	18,4				287.31.18,88				114,11	100.34.19,94	C.		
	B. (w.) XXI. 1398.	1.6,6	7,4	5,2	5,6	2,7	5,2				289.16.5,45	30,160	53,6	48,3	123,08	102.19.15,48	C.		
	e <sup>2</sup> Aquarii.....	...	...	...	...	...	...		16,504		289.13.28,95				122,84	102.16.38,74	C.		
	(b) Proserpine B. ...	1.30,9	32,9	29,3	29,0	27,2	28,6		7,030	+1	290.27.9,83	30,164	53,0	47,0	130,21	103.30.26,99	C.		
	Neptune.....	1.42,9	43,9	43,5	42,0	40,3	41,4				284.1.42,33				46,5	99,28	97.4.28,56	C.	
Sept.10	(c) Zenith Point. ....	2.8,3	12,8	8,3	8,9	6,9	10,3		12,270		224.46.1,05			58,7			C.		
Sept.11	⊙ N.L.....	2.24,3	28,9	25,5	24,3	22,3	23,6		12,379	+1	272.6.14,10	30,146	59,0	65,5	61,73	85.8.22,78	C.		
	⊙ S.L.....	4.15,7	19,0	18,0	14,2	13,4	14,1		12,379	+2	272.38.4,80				62,89	85.40.14,64	C.		
	(d) Polaris SP.....	1.33,5	37,3	34,9	35,5	36,5	34,5				185.31.30,66	30,120	61,4	67,7	46,26	-1.28.8,65	C.		
	(d) δ Ursæ Minoris R.	4.23,0	32,8	34,1	31,4	31,0	32,4		10,947		79.8.39,34	30,100	61,0	58,9	39,41	3.23.50,10	C.		
	(d) δ Ursæ Minoris ..	3.44,9	55,2	57,4	52,2	55,0	54,1		10,947		190.23.19,22					3.23.46,76	C.		
	(d)(e) 51(H.)Cep.SP.R.	2.4,5	14,5	16,2	14,9	14,4	15,6		8,749		85.17.20,26			57,8	49,33	-2.45.0,54	C.		
	(d)(e) 51(H.)Cephei.SP.	4.25,2	35,0	37,5	34,1	32,8	35,0		8,749		184.14.37,75					-2.45.4,63	C.		
	β Lyræ R. ....	0.47,5	58,9	56,9	57,8	57,4	57,9		10,510	-1	25.45.24,48	30,088	60,5	56,8	19,93	56.48.4,50	C.		
	β Lyræ .....	1.57,3	64,6	65,7	62,3	64,0	64,0		10,510	+2	243.46.31,89					56.47.58,77	C.		
	α <sup>1</sup> Capricorni.....	3.52,6	59,8	63,9	58,3	58,5	60,8				289.53.59,00	30,087	58,5	53,8	124,89	102.57.10,84	C.		
	α <sup>2</sup> Capricorni.....	...	...	...	...	...	...		2,435		289.56.15,92				125,11	102.59.27,98	C.		
	ρ Capricorni.....	3.31,0	38,7	44,4	38,2	40,5	39,9				295.13.38,80				162,48	108.17.28,23	C.		
	(f) B.A.C. 7044 B....	...	...	...	...	...	...		89,066	+1	295.17.5,10				162,99	108.20.55,10	C.		
	(g) H. C. 39636.....	0.49,3	56,9	59,0	58,9	56,5	59,2			+1½	296.30.56,51			52,9	174,93	109.34.58,39	C.		
	B. (w.) xx. 926..	0.20,8	28,7	30,9	30,6	29,9	32,0			+½	292.30.28,81	30,090	57,8	52,0	141,76	105.33.57,52	C.		
	B. (w.) xx. 950..	...	...	...	...	...	...		10,140		292.30.5,04				141,71	105.33.33,70	C.		
	B. (w.) xx. 1170..	1.31,8	39,9	42,3	39,6	40,1	39,4				290.41.38,83				130,02	103.44.55,82	C.		
	B. (w.) xx. 1394..	2.49,5	37,7	39,0	36,1	36,9	36,0				289.57.39,22				125,71	103.0.51,88	C.		
	(f) B. (w.) xx. 1398 B.	...	...	...	...	...	...		87,685	½	290.1.34,42				126,09	103.4.47,46	C.		
	ζ Cygni R. ....	1.0,6	10,4	9,4	11,2	8,5	13,6		7,746	-½	22.11.35,08	30,086		50,5	24,36	60.21.58,33	C.		
	ζ Cygni.....	4.47,5	54,0	59,0	54,2	55,4	56,6		7,746	+2	247.20.20,97					60.21.52,28	C.		
	B.A.C. 7451.....	2.48,0	55,4	58,1	55,3	56,6	56,4		19,176	½	289.14.22,74				122,07	102.17.31,76	C.		
	(h) B. (w.) XXI. 463 B.	...	...	...	...	...	...		1,634	+2	289.20.27,43				122,62	102.23.37,00	C.		
	κ Capricorni.....	2.25,2	32,8	36,1	33,8	33,2	36,4				296.27.32,93			50,3	175,29	109.31.35,17	C.		
	δ Capricorni.....	3.16,9	24,9	28,9	25,7	23,6	27,3				293.43.24,57				151,17	106.47.2,69	C.		
	B. (w.) XXI. 1126.	2.23,8	32,5	35,6	34,3	31,8	35,6		16,501	+½	291.39.55,83				136,54	104.43.19,32	C.		
	(h)(i) Proserpine B. ...	3.45,5	52,2	54,9	52,5	52,0	53,8		6,284	+2	290.34.47,20	30,084	55,2	49,7	129,91	103.38.4,06	C.		
B. (w.) XXI. 1134	3.21,4	29,5	33,7	31,9	29,0	35,1				280.23.30,12	30,074	54,9	48,7	85,73	93.26.2,80	C.			
B. (w.) XXI. 1141	...	...	...	...	...	...		3,706		280.25.20,53				85,83	93.27.53,32	C.			
Neptune.....	2.52,0	59,4	63,6	60,8	59,0	62,7				284.2.59,60				98,17	97.5.44,72	C.			
Sept.12	(k) ⊙ S.L.....	2.33,8	42,8	44,6	40,0	44,7	41,7		14,016	-1	273.0.56,94	29,980	68,9	72,8	62,47	86.3.6,36	C.		
	⊙ N.L.....	0.39,2	50,2	49,8	48,0	50,6	46,9		14,016	+1	272.29.2,59				61,32	85.31.10,86	C.		
	(l) δ Ursæ Minoris R.	3.55,8	61,6	61,6	62,5	64,4	63,5		9,720		79.8.40,74	29,886	67,0	67,4	38,47	3.23.49,84	C.		
	(l) δ Ursæ Minoris ..	3.26,1	30,9	33,6	30,7	32,4	32,9		9,720		190.23.19,26					3.23.47,74	C.		
	(m) ζ Aquilæ R. ....	2.16,6	24,4	24,5	23,6	25,0	24,4		7,179	-1½	6.13.0,98	29,874	66,0	64,7	45,03	76.20.53,07	C.		
	ζ Aquilæ.....	3.15,9	21,1	22,4	19,4	19,3	22,3		7,179	+1½	263.18.58,14					76.20.50,12	C.		
	α <sup>2</sup> Capricorni.....	1.19,6	21,0	22,8	21,1	22,0	24,6				289.56.21,85	29,870	64,5	62,9	121,95	102.59.30,75	T.		
	B.A.C. 7043.....	0.59,7	62,3	62,9	63,7	63,7	64,5				294.51.2,80	29,888	64,7	62,1	155,53	107.54.45,28	C.		
	(h) B. (w.) xx. 681 B.	2.20,6	25,6	26,0	24,6	24,6	26,4		1,157	+1¼	291.5.7,10				128,85	104.8.22,90	C.		
	B. (w.) xx. 686..	...	...	...	...	...	...				291.2.24,63				128,58	104.5.40,16	C.		
	(n) B. (w.) xx. 876 B.	3.37,4	40,3	41,6	39,5	39,0	40,2		3,170	+1½	291.15.40,10			61,8	130,00	104.18.57,05	C.		
	B. (w.) xx. 1031..	1.9,2	11,5	13,6	13,2	12,1	15,1				291.1.12,45	29,875		61,7	128,51	104.4.27,91	C.		

ONE REVOLUTION of the MICROMETER = 20".856. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.  
 ASSUMED CO-LATITUDE = 37°.47'.8".00.

(a) Reduction to wire-reading = +0".054. (b) Very faint. Reduction to wire-reading = +0".039. (c) The Temperature is that given by a Thermometer attached to the Pier. (d) Times by Molyneux, 13<sup>h</sup>.15<sup>m</sup>.30<sup>s</sup>, 13<sup>h</sup>.3<sup>m</sup>.45<sup>s</sup>, 13<sup>h</sup>.10<sup>m</sup>.50<sup>s</sup>, 13<sup>h</sup>.25<sup>m</sup>.30<sup>s</sup>, and 13<sup>h</sup>.27<sup>m</sup>.50<sup>s</sup>. M slow on H, 4". (e) The corrections are +1".67 and -0".77. (f) Reduction to wire-reading = +0".037. (g) Very faint. (h) Reduction to wire-reading = +0".050. (i) Bisected doubtfully from its extreme faintness. 'A brighter object of equal N.P.D. followed about 15'.' (k) The Sun had been shining on the Telescope, but the Circle was screened. (l) Times by Molyneux, 13<sup>h</sup>.11<sup>m</sup>.15<sup>s</sup>, and 13<sup>h</sup>.13<sup>m</sup>.9<sup>s</sup>. M slow on H, 6". (m) Some unsteadiness. (n) Extremely faint. Reduction to wire-reading = +0".052.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refract.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						Inch.	o	o	"	o	'	"
Sept. 12	ζ Cygni.....	0.21,0	21,1	23,4	21,6	23,2	25,2	+0,1			247.20.22,58	29,864	63,8	61,4	23,65	60.21.53,18			T.
Sept. 13	(a) ⊙ N.L.....	3.31,4	36,1	37,4	35,6	33,5	36,6		13,411	-1	272.52.3,40	29,882	64,5	69,5	62,35	85.54.12,70			C.
	⊙ S.L.....	0.19,5	26,4	24,8	26,0	23,4	26,4		13,411	+1	273.23.52,16				63,52	86.26.2,63			C.
Sept. 15	(b) ⊙ S.L.....	1.26,5	29,9	32,2	32,4	30,3	32,4	-3,8	13,374	+1	274.9.58,95	29,912	63,0	65,8	65,81	87.12.13,03			C.
	⊙ N.L.....	4.36,7	42,4	44,1	41,3	40,4	41,4		13,374	+2	273.38.8,75				64,59	86.40.21,61			C.
	(c) Polaris SP.....	1.26,2	30,7	32,0	32,2	32,1	30,8				185.31.30,37	29,908	63,9	68,7	45,84	-1.28.7,20			C.
	(c) Polaris SP.....	...	...	...	...	...	...		8,951		185.31.31,31					-1.28.6,26			C.
	(c) Polaris SP.....	...	...	...	...	...	...		8,944		185.31.31,37					-1.28.6,20			C.
Sept. 16	⊙ N.L.....	2.25,7	31,0	33,2	31,0	28,6	29,4		12,636	-1	274.1.13,95	29,817	65,8	71,2	64,57	87.3.26,79			C.
	⊙ S.L.....	4.20,3	24,5	28,6	25,4	22,6	23,7		12,636	+1	274.33.7,54				65,79	87.35.21,60			C.
	(d) Polaris SP.....	1.26,1	32,9	31,3	31,9	32,7	32,9				185.31.30,68	29,786	68,0	73,5	45,25	-1.28.6,30			C.
Sept. 18	(c) ⊙ S.L.....	1.17,4	21,2	23,6	22,4	21,2	22,4		14,014	+1	275.19.36,36	30,045	64,5	65,8	68,86	88.21.53,49			C.
	Zenith Point ....	1.48,0	53,7	54,1	54,2	53,6	53,3		11,534		44.45.59,73								C.
Sept. 19	(f) ⊙ N.L.....	2.29,1	32,8	35,3	35,1	32,4	34,5		13,716	-2	275.10.55,03	29,980	62,2	61,6	68,94	88.13.12,29			C.
Sept. 20	π Draconis R. ...	4.48,2	51,4	51,3	49,6	48,8	49,9		10,630	-2	57.59.13,93	29,938	62,0	56,4	13,54	24.33.40,26			C.
	π Draconis.....	3.22,5	22,5	26,0	20,5	22,3	22,3		10,630		211.32.48,25					24.33.43,98			C.
	B. (w.) XXI. 399.	1.10,9	11,5	13,7	10,8	10,5	11,4		8,511	+3	291.31.21,17	29,960	58,0	54,4	133,92	104.34.43,36			C.
	H. C. 41941.....	1.20,2	18,4	23,6	20,4	18,6	18,4				294.6.19,77				152,25	107.10.0,29			C.
	κ Capricorni.....	2.35,1	32,2	37,0	33,3	31,7	32,7				296.27.33,35			54,0	173,24	109.31.34,86			C.
	μ Capricorni.....	0.42,2	39,0	43,6	40,9	41,0	40,7				291.10.41,15			53,9	131,90	104.14.1,32			C.
	H. C. 42806.....	4.59,9	57,6	62,8	56,9	55,3	58,0				290.39.57,78				128,79	103.43.14,84			C.
	(g) B. (w.) XXII. 140	2.4,9	4,0	7,8	4,4	1,6	4,6				284.42.4,28			53,8	99,78	97.44.52,33			C.
	(g)(h) B. (w.) XXII. 161 B	...	...	...	...	...	...		0,403		284.45.3,10				99,98	97.47.51,35			C.
	B. (w.) XXII. 140.	1.59,3	61,9	62,3	58,7	58,8	59,5			+1½	284.41.59,82	30,176	55,0	47,4	101,81	97.44.49,90			C.
Sept. 21	(i) B. (w.) XXII. 161 B.	...	...	...	...	...	...		0,219	+1½	284.45.1,97				102,02	97.47.52,26			C.
	B. (w.) XXII. 415.	2.18,0	18,9	21,0	19,5	16,3	17,5			+1½	289.57.18,24			47,0	127,34	103.0.33,85			C.
	(k) B. (w.) XXII. 420 B.	...	...	...	...	...	...		6,891	+2	289.58.0,96				127,41	103.1.16,64			C.
	(i) B. (w.) XXII. 599 B.	3.58,3	59,5	62,2	58,7	57,8	59,6		1,741	+½	282.51.29,24				94,79	95.54.12,30			C.
	(k) Neptune B.....	3.23,6	25,8	25,8	25,0	21,9	24,7		6,730	+1½	284.9.10,16	30,180	53,5	47,4	99,64	97.11.58,07			C.
Sept. 22	(l) ⊙ S.L.....	4.14,6	15,3	19,9	16,0	14,0	15,5	-2,4	12,790	+½	276.52.56,38	30,286	56,2	56,8	74,71	89.55.19,53			C.
	(m) π Draconis R. ...	4.44,2	48,0	50,5	46,7	45,5	47,2		10,540	-1	57.59.14,18	30,238	56,8	51,1	13,82	24.33.39,56			C.
	π Draconis.....	3.18,4	17,1	21,9	18,0	18,3	17,7		10,540	+1	211.32.46,51				13,82	24.33.41,13			C.
Sept. 25	(n) ⊙ N.L.....	1.30,2	30,4	32,4	31,3	30,3	31,3		10,039	+2	277.31.8,66	30,238	57,4	58,0	76,13	90.33.33,23			C.
	Zenith Point ....	1.35,3	36,1	38,1	37,1	37,4	38,9		10,796		44.45.59,56			57,7					C.
	π Draconis R. ...	4.27,4	28,6	32,0	28,0	27,4	29,8		9,636	-2	57.59.13,91	30,286	55,9	52,1	13,81	24.33.39,84			C.
	π Draconis.....	2.59,0	59,3	62,9	60,0	60,9	60,0		9,636	-½	211.32.46,93					24.33.41,56			C.
	(o) γ Aquilæ R.....	4.10,4	10,8	16,0	13,0	11,4	13,5		7,164	-1	2.49.50,44				52,3	79.44.9,87			C.
	γ Aquilæ.....	1.32,4	32,4	35,0	34,6	32,8	34,8		7,164	+2	266.42.11,95					79.44.13,14			C.
	(p) *R. 20 <sup>h</sup> . 32 <sup>m</sup> . 42 <sup>s</sup> B.	3.52,8	52,1	57,6	52,6	52,6	52,6		6,174	+2	294.49.50,92	30,310	54,0	50,4	161,36	107.53.40,72			C.
	(q) Neptune.....	1.42,5	40,6	44,9	41,7	40,1	41,7			+1½	284.11.41,73	30,304	52,0	48,9	99,90	97.14.30,08			C.
Sept. 26	⊙ S.L.....	2.28,6	29,8	32,0	30,9	28,6	29,9		11,733	-1	278.26.33,04	30,320	55,6	60,0	78,62	91.29.0,10			C.
	⊙ N.L.....	0.31,4	33,0	33,4	34,5	31,9	32,5		11,733	+1	277.54.35,48				77,12	90.57.1,04			C.
	(r) Polaris SP.....	1.35,3	36,2	37,6	38,0	37,7	37,0				185.31.36,67	30,312	56,5	61,1	47,16	-1.28.2,05			C.
	Neptune.....	2.15,6	14,5	18,2	14,8	12,2	17,1				284.12.15,22	30,300	53,0	47,8	100,15	97.15.3,81			C.
	B. (w.) XXIII. 491	2.5,9	5,0	9,0	7,4	4,6	9,1				280.47.6,67			47,4	87,88	93.49.42,99			C.
	B. (w.) XXIII. 511	...	...	...	...	...	...		10,928		280.46.26,46				87,85	93.49.2,75			C.
	B. (w.) XXIII. 702	4.38,2	37,4	42,1	38,5	36,0	41,8				286.34.38,63				110,36	99.37.37,43			C.
	(p) *R. 23 <sup>h</sup> . 34 <sup>m</sup> . 32 <sup>s</sup> B.	...	...	...	...	...	...		9,346	+½	286.34.30,51				110,35	99.37.29,30			C.
	(p) B. (w.) XXIII. 713 B.	...	...	...	...	...	...		8,300	+2	286.34.52,22				110,38	99.37.51,04			C.

ONE REVOLUTION of the MICROMETER = 20".856. ONE INTERVAL from the middle wire for an Equatorial Star = 16".6.  
 ASSUMED CO-LATITUDE = 37°.47'.8".00.

(a) 'Limbs beautifully sharp and steady.' (b) Clouded, but satisfactorily observed. (c) Very tremulous. Times by Molyneux, 13<sup>h</sup>.7<sup>m</sup>.5<sup>s</sup>, 13<sup>h</sup>.7<sup>m</sup>.30<sup>s</sup>, and 13<sup>h</sup>.8<sup>m</sup>.1<sup>s</sup>. M slow on H, 13<sup>h</sup>. (d) Time by Molyneux, 13<sup>h</sup>.8<sup>m</sup>.32<sup>s</sup>. M slow on H, 16<sup>h</sup>. (e) Ragged and tremulous. N.L. hid by cloud.  
 (f) S.L. clouded. (g) Very faint at times. (h) Reduction to wire-reading = +0".023. After the observations of this day a piece of straw was found hanging on the fixed wire, from which it was extricated before the observations of the next day. (i) Reduction to wire-reading = +0".043. (k) Reduction to wire-reading = +0".055. (l) 'Bad: very uneven.' N.L. was hid by cloud. (m) Faint from clouds. (n) Tremor: S.L. hid by cloud. The bisection was inadvertently made with the fixed wire, the coincidence reading for which at the 5th wire was found the same day. (o) Very steady.  
 (p) Reduction to wire-reading = +0".043. (q) Faint. (r) Time by Molyneux, 13<sup>h</sup>.8<sup>m</sup>.50<sup>s</sup>. M fast on H, 1<sup>m</sup>.25<sup>s</sup>.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.			Observer.
		A	B	C	D	E	F						Int.	Ext.					
		"	"	"	"	"	"						"	"		"	"	"	
Sept.27	⊙ N.L.....	4. 56,9	59,3	61,1	59,0	57,2	59,4	-2,4	14,832	-1	278. 17. 57,06	30,328	58,0	63,3	77,71	91. 20. 23,21		C.	
	⊙ S.L.....	1. 58,6	61,7	61,5	61,7	60,0	59,5		14,832	+1	278. 49. 58,42				76,41	91. 52. 23,27		C.	
	H. C. 36999	0. 46,9	47,9	49,8	48,0	47,3	48,0				296. 0. 47,92	30,269	57,9	54,2	170,58	109. 4. 46,94		C.	
	(a) B.A.C. 6707 B...	...	...	...	...	...	...		83,427		296. 6. 11,71				171,44	109. 10. 11,59		C.	
	α Aquilæ R.....	3. 11,0	13,4	15,5	14,5	14,8	14,5		8,530		1. 3. 23,41				55,88	81. 30. 40,03		C.	
	(b) α Aquilæ.....	3. 21,3	23,1	26,8	23,2	22,4	24,8		8,530	+2	268. 28. 33,22					81. 30. 37,54		C.	
	B.A.C. 6878.....	0. 16,6	16,2	17,0	18,3	15,4	17,2			+1	299. 55. 16,75				217,13	113. 0. 2,32		C.	
	(c) B. (w.) XXI. 227 B.	1. 50,0	51,6	50,7	62,6	49,4	53,3		4,043	+1	291. 33. 33,49	30,258		53,1	135,85	104. 36. 57,78		C.	
	(c) B. (w.) XXI. 231 B.	...	...	...	...	...	...		5,160	+1	291. 33. 10,22				135,81	104. 36. 34,47		C.	
	(d) B.A.C. 7470.....	1. 53,7	54,5	53,0	55,5	52,9	56,1		8,663	+2	291. 52. 1,02			53,6	137,72	104. 55. 27,18		C.	
	(e) B. (w.) XXI. 323.	2. 15,4	14,8	15,6	18,2	14,0	19,1			+1	287. 22. 15,96	30,250	56,0	53,3	112,54	100. 25. 16,94		C.	
	σ Aquarii.....	2. 3,4	3,6	4,6	6,0	2,8	7,0			+1	288. 22. 4,39				117,45	101. 25. 10,28		C.	
	(e)(f) B. (w.) XXI. 608	0. 34,6	35,0	34,4	38,3	33,6	37,6			+1	287. 5. 35,49			53,0	111,30	100. 8. 35,23		C.	
	B. (w.) XXI. 612	...	...	...	...	...	...		9,404	+2	287. 5. 26,99				111,29	100. 8. 26,72		C.	
	(g) τ <sup>1</sup> Aquarii.....	0. 48,3	47,5	48,8	51,3	47,5	50,7				291. 45. 48,95				137,17	104. 49. 14,56		C.	
	τ <sup>2</sup> Aquarii.....	3. 6,1	5,9	8,8	8,9	5,2	10,0				291. 18. 7,23				134,20	104. 21. 29,87		C.	
	Neptune.....	2. 48,7	49,4	51,9	51,4	48,5	51,5				284. 12. 50,02				98,97	97. 15. 37,43		C.	
	χ Aquarii.....	3. 10,6	10,3	12,0	12,7	9,3	13,0				285. 28. 11,07				104,08	98. 31. 3,59		C.	
Sept.28	⊙ S.L.....	3. 5,2	4,7	7,9	6,3	2,6	8,1		8,252		279. 13. 21,15	30,132	63,7	56,6	80,94	92. 15. 50,53		B.	
	⊙ N.L.....	1. 4,3	5,3	6,8	8,3	3,0	6,5		8,252		278. 41. 21,22				79,38	91. 43. 49,04		B.	
	θ Cephei.....	3. 28,1	26,9	31,0	28,5	28,5	30,1				214. 28. 28,57	30,074	56,5	50,3	10,64	27. 29. 26,37		T.	
	(h)(i) 3 Aquarii.....	0. 45,0	40,4	44,0	42,4	45,5	45,4			+2	282. 30. 43,67				92,58	95. 33. 24,69		T.	
	(i) 57 Cygni.....	3. 11,9	11,0	14,5	13,7	12,8	15,1			+1	233. 8. 12,87	30,074	55,9	49,7	8,63	46. 9. 29,94		T.	
	ζ Cygni.....	0. 12,4	15,5	18,2	19,0	17,1	19,0				247. 20. 16,85				24,39	60. 21. 49,68		T.	
	(k) α Cephei.....	0. 34,4	35,6	36,7	40,8	36,4	38,5			+1	215. 0. 37,30				10,09	28. 1. 35,65		T.	
	β Aquarii.....	4. 43,3	42,0	46,0	42,0	43,0	45,8			+1	283. 9. 43,29		54,5	49,8	95,04	96. 12. 26,77		T.	
	(l) μ Capricorni.....	0. 36,9	35,4	36,8	38,6	36,3	38,7			+1	291. 10. 37,03				133,51	104. 13. 58,98		T.	
	(i) α Aquarii.....	3. 54,5	52,4	55,9	56,9	54,5	56,5				277. 58. 54,80		54,0	48,9	78,44	91. 1. 21,68		T.	
	ε Cephei.....	4. 33,4	31,7	35,2	35,1	31,4	37,9			+2	220. 39. 34,65		53,9	48,4	4,22	33. 40. 38,87		T.	
	η Pegasi.....	0. 34,4	31,4	36,0	37,1	34,0	37,9				247. 30. 35,08			47,9	24,68	60. 32. 8,20		T.	
	(m) Neptune.....	3. 26,0	24,5	30,1	29,8	23,5	28,7			+4	284. 13. 26,49	30,076	53,4	47,6	99,54	97. 16. 14,47		B.	
Sept.29	(n) ⊙ N.L.....	0. 13,0	13,8	13,6	16,8	12,7	15,1		10,311		279. 4. 46,81	30,088	56,3	66,5	78,82	92. 7. 14,07		B.	
	⊙ S.L.....	2. 9,6	12,6	14,1	14,0	9,6	14,4		10,311		279. 36. 44,86				80,38	92. 39. 13,68		B.	
	(o) 57 Cygni.....	3. 10,6	9,4	10,4	13,0	10,0	14,5	-3,4		+2	233. 8. 11,52	30,116	58,0	59,5	8,47	46. 9. 27,16		T.	
	(p)(i) ζ Cygni.....	0. 18,4	19,5	20,5	20,9	22,0	22,6				247. 20. 20,62				23,94	60. 21. 51,61		T.	
	α Cephei.....	0. 34,9	36,3	35,0	39,2	35,4	39,1			+2	215. 0. 37,71				9,90	28. 1. 34,98		T.	
	β Aquarii.....	4. 43,9	47,0	46,9	42,8	44,8	45,5				283. 9. 44,62				93,31	96. 12. 25,10		T.	
	ε Pegasi.....	0. 13,0	13,9	13,0	17,0	11,5	16,9				267. 45. 14,20	30,120	57,0	57,4	53,87	80. 47. 15,24		T.	
	(i) α Aquarii.....	3. 58,7	61,0	62,9	58,5	57,5	61,9				277. 58. 59,63				77,21	91. 1. 24,01		T.	
	ζ Cephei.....	4. 41,5	44,2	45,2	43,0	43,8	44,5			+2	219. 29. 44,11			50,5	5,41	32. 30. 45,87		T.	
ζ Aquarii.....	3. 12,6	16,1	15,5	13,3	12,5	16,4				277. 43. 14,03		55,5	50,5	77,56	90. 45. 38,76		T.		
Sept.30	(q) ⊙ S.L.....	0. 18,6	20,2	21,5	23,3	18,6	23,2		9,783	-1	280. 0. 4,80				84,40	93. 2. 36,37		C.	
	⊙ N.L.....	3. 20,0	22,1	24,0	22,8	19,1	24,6		9,783	+1	279. 28. 5,12	30,140	56,7	64,7	80,38	92. 30. 32,67		C.	
	Neptune.....	4. 35,3	38,5	39,9	38,5	36,3	40,2			+4	284. 14. 37,59	30,172	56,5	51,3	99,17	97. 17. 23,93		B.	
Oct. 2	(r) ⊙ N.L.....	0. 7,5	10,1	9,8	13,3	8,7	11,7		10,285	-1	280. 14. 43,63	29,998	56,2	59,0	83,28	93. 17. 14,08		C.	
	⊙ S.L.....	2. 4,4	7,1	6,4	8,8	4,8	8,5		10,285	+1	280. 46. 39,35				84,95	93. 49. 11,47		C.	
	β Aquarii.....	4. 45,8	46,0	47,2	45,0	45,6	46,6				283. 9. 45,50	29,778	57,0	50,9	93,89	96. 12. 26,56		T.	
	ε Pegasi.....	0. 13,6	15,0	16,0	17,0	13,0	17,0				267. 45. 15,23				53,97	80. 47. 16,31		T.	
	(i) α Aquarii.....	3. 57,2	59,4	59,4	60,0	57,0	61,0				277. 58. 58,55				77,35	91. 1. 23,07		T.	
	(s) ζ Cephei.....	4. 39,1	41,1	41,5	40,8	41,6	43,4			+2	219. 29. 41,66				5,35	32. 30. 43,48		T.	
	ζ Aquarii.....	3. 14,0	15,5	16,5	15,0	13,2	17,0				277. 43. 14,83	29,778	55,0	50,0	76,76	90. 45. 38,76		T.	
	(t) ζ Pegasi.....	3. 28,5	29,8	31,0	30,5	29,1	32,0				266. 53. 29,75				52,46	79. 55. 29,38		T.	
	ι Cephei.....	2. 48,1	49,0	49,6	50,8	49,0	50,9				211. 32. 49,25		54,9	50,4	13,63	24. 33. 42,79		T.	
	Neptune.....	0. 40,7	41,5	42,9	43,9	41,3	43,8				284. 15. 42,27	29,770	55,2	50,9	98,01	97. 18. 27,45		C.	
	(s) λ Andromedæ...	3. 24,1	22,5	23,9	23,9	23,0	23,8				231. 18. 23,15		54,6	50,6	6,65	44. 19. 36,97		T.	

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°. 47'. 8",00.

(a) Reduction to wire-reading = +0",048. (b) 'Good.' (c) Reductions to wire-reading, +0",048 and +0",041. (d) Extremely faint from cloud.  
 (e) Very faint. (f) 'Not good.' (g) The reading of Microscope E, having been accidentally omitted, was supplied by replacing the Circle. (h) Hurried and unsatisfactory bisection. (i) The Circle reading has been diminished 1'. (k) The recorded Circle reading was 1' less. (l) 'The star steady and bisection good.' (m) The microscopes were read off by T. (n) Very steady. (o) The observer was hurried by having to remove the sun-shade.  
 (p) Bad definition. (q) Very ragged and unsteady. (r) The division bisected by Microscope E being 5' forward, the reading has been corrected by +1",1 for error of its Run, obtained at the time after replacing the Circle. (s) Great motion. (t) Bisection not satisfactory.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Oct. 2	(a) $\alpha$ Andromedæ...	1. 3,6	2,1	3,5	5,1	5,7	6,0	-3,4			248.41.42,22	29,756	54,9	50,5	25,70	61.42.36,09	T.
	(b) $\rho$ Andromedæ...	3.42,8	43,5	43,5	45,8	45,0	45,8				239.48.43,98				15,58	52.50.6,73	T.
Oct. 3	(c) $\odot$ S.L.....	0.28,2	29,5	30,4	33,3	30,0	32,0		10,725	-1	281.9.54,80	29,718	58,4	60,2	85,19	94.12.27,16	C.
	$\odot$ N.L.....	3.31,8	33,6	35,3	35,5	32,2	35,1		10,725	+1	280.37.57,26				83,51	93.40.27,94	C.
	Zenith Point....	0.55,6	57,7	56,6	59,5	57,7	60,9		8,859		224.46.0,83						C.
	$\epsilon$ Cephei.....	2.48,2	45,0	50,5	51,9	49,9	50,6			-1	211.32.49,19	29,870	54,0	46,5	13,78	24.33.42,58	T.
	Neptune.....	1.12,0	11,8	14,4	14,8	9,9	15,2				284.16.12,88	29,874	53,0	45,3	99,52	97.18.59,57	C.
	$\psi$ Andromedæ...	1.46,7	44,9	47,8	48,3	47,0	48,1			+2	231.21.47,54	29,870	50,0		6,78	44.23.1,49	T.
	(d) $\omega$ Piscium.....	4.12,9	11,0	15,5	14,5	11,0	16,0				270.54.13,00			43,9	61,29	83.56.21,46	T.
	(e) $\rho$ Andromedæ...	3.43,4	40,6	45,1	41,8	42,0	45,4				239.48.42,63				15,85	52.50.5,65	T.
	(f) $\beta$ Ceti.....	3.29,9	1,2	6,0	3,6	1,0	5,0				295.43.2,93	29,870	44,9	42,0	169,83	108.46.59,93	T.
Oct. 21	$\odot$ N.L.....	1.56,0	57,6	59,3	60,7	56,6	60,4	+0,9	7,860	-1	287.22.22,37	29,548	50,2	51,8	110,28	100.25.21,19	C.
	$\odot$ S.L.....	4.30,0	4,8	8,1	6,3	2,7	7,7		7,860	+1	287.54.29,05				112,83	100.57.30,42	C.
Oct. 23	$\odot$ N.L.....	0.25,6	28,2	27,8	30,6	26,5	30,4		10,805		288.4.50,55	29,271	50,2	50,4	112,93	101.7.52,02	B.
	$\odot$ S.L.....	2.36,1	39,4	39,6	40,1	36,5	39,6		10,805		288.37.0,98				115,59	101.40.5,11	B.
	(g) Neptune.....	0.30,9	29,0	33,7	34,2	30,5	35,3			+4	284.25.31,95	29,294	44,9	39,1	99,47	97.28.19,96	B.
	(a) $\alpha$ Andromedæ...	0.57,9	59,3	61,9	63,5	60,6	62,2				248.41.0,93	29,294	43,9	38,4	25,94	61.42.35,41	T.
	$\rho$ Andromedæ...	3.34,0	35,5	38,5	37,6	36,5	39,4				239.48.37,03				15,72	52.50.1,29	T.
	(h) $\kappa$ Cassiopeia.....	1.10,5	9,6	13,0	13,5	10,1	13,9				214.51.11,80				10,22	27.52.10,12	T.
	$\delta$ Andromedæ...	4.20,4	21,6	26,2	23,0	20,6	25,4				246.54.23,00				23,81	59.55.55,35	T.
	$\eta$ Cassiopeia.....	1.13,2	13,8	16,7	17,0	12,8	14,9			+1	219.56.15,00		43,0	37,5	4,95	32.57.18,59	T.
	(g)(i) Egeria B.....	2.39,4	40,3	45,6	42,5	39,9	44,9		7,633	+1	280.43.9,57	29,294	42,2	37,4	86,55	93.45.44,66	B.
	$\pi$ Piscium.....	4.29,9	2,1	10,9	4,5	0,9	6,6			+1	265.34.4,80				50,57	78.36.3,91	T.
	$\beta$ Arietis.....	2.21,0	22,6	27,1	23,1	21,5	25,7				256.52.23,57				36,77	69.54.8,88	T.
	$\alpha$ Arietis.....	1.43,1	46,0	50,6	46,0	46,6	47,5				254.11.46,68		42,0	37,2	33,08	67.13.28,30	T.
Oct. 24	$\odot$ S.L.....	3.31,1	5,2	7,3	6,6	2,4	6,4		9,364	-1	288.57.57,90	29,352	49,2	48,7	117,38	102.1.3,82	C.
	$\odot$ N.L.....	0.55,2	57,3	59,0	60,4	56,8	59,0		9,364	+1	288.25.50,11				115,37	101.28.54,02	C.
Oct. 25	(k) Zenith Point....	1.0,3	5,1	4,9	5,1	3,1	6,8		9,230		224.45.59,46						C.
Oct. 26	$\odot$ N.L.....	2.57,7	8,8	9,8	10,2	5,6	10,7		8,734		289.7.14,08	29,562	47,4	47,0	120,19	102.10.22,81	C.
	$\odot$ S.L.....	4.13,4	16,8	10,6	17,2	13,3	18,7			+2	289.39.21,65				123,09	102.42.33,28	C.
Nov. 17	(l) Zenith Point....	4.5,0	10,1	11,4	10,6	6,2	12,3	-0,6	9,629		291.58.56,07						C.
Nov. 18	(m) $\odot$ S.L.....	3.12,4	19,2	21,0	18,9	15,6	21,6		5,586		363.39.29,25	29,670	43,5	43,0	175,36	109.30.36,54	B.
Nov. 22	Neptune.....	4.8,4	12,0	17,7	14,3	10,2	17,8				351.44.13,32	28,898	40,2	33,8	99,62	97.34.4,53	B.
Nov. 23	H. C. 4528.....	1.30,5	36,6	36,3	36,3	31,5	39,0				328.11.35,00	29,052	39,2	34,7	42,79	74.0.29,38	B.
Nov. 24	(n) Zenith Point....	4.6,7	11,9	10,8	13,4	7,4	14,4		9,689		291.58.56,41						B.
	(n) Neptune.....	4.23,2	27,4	29,4	31,0	25,3	31,3		9,726		351.44.12,81	29,236	38,6	33,7	100,80	97.34.5,20	B.
Nov. 27	$\odot$ S.L.....	2.12,7	18,0	21,4	23,3	16,4	24,1	+2,2	5,949		5.33.23,11	29,823	35,3	33,2	201,65	111.24.56,89	B.
	(n) $\odot$ N.L.....	4.51,8	57,0	58,2	58,5	55,4	61,7		5,949		5.1.0,73				195,04	110.52.27,90	B.
	B. (w.) o. 595....	1.25,6	29,2	31,4	31,4	26,3	36,4				341.11.30,17	29,749	35,9	31,8	69,71	87.0.52,01	B.
	B.A.C. 252.....	1.36,0	40,0	43,3	42,6	47,8	45,9				338.6.42,72				62,59	83.55.57,44	B.
	B. (w.) o. 888....	4.3,8	6,4	12,4	10,3	4,9	14,8				339.19.9,07				65,28	85.8.26,48	B.
	88 Piscium.....	2.2,8	6,7	9,6	9,1	4,5	13,1				337.57.7,78				62,24	83.46.22,15	B.
	(o) B. (w.) i. 191 B.	1.8,5	12,1	14,0	14,2	8,7	13,9		89,000		335.19.40,12	29,744	35,3	31,7	56,80	81.8.49,05	B.
	(n) B. (w.) i. 318....	4.52,7	56,7	57,6	59,6	54,1	61,3				336.19.57,00				58,83	82.9.7,96	B.
	B. (w.) i. 397....	3.32,4	36,4	40,1	37,4	33,3	42,4				338.18.37,27				63,03	84.7.52,43	B.
	B. (w.) i. 909....	1.3,7	7,6	9,7	10,8	4,2	14,1				338.26.8,43	29,720			63,25	84.15.23,81	B.
	B. (w.) i. 916....	...	...	...	...	...	...		13,046		338.24.44,05				63,17	84.13.59,25	B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

Nov. 25. The Micrometer-wire was adjusted equatorially: on Dec. 8 the adjustment was verified.

(a) The Circle reading has been diminished 1'. (b) Bisection not satisfactory. (c) Extremely ragged and unsteady. (d) Unsteady.  
 (e) Cloudy and bisection unsatisfactory. (f) Great motion and clouds passing. After Oct. 3 Circle observations were suspended to prepare apparatus for carrying two collimators. (g) The Microscopes were read by T. (h) Badly defined and unsteady. (i) 'Very good.' Reduction to wire-reading = +0",053.  
 (k) The Microscope readings have all been diminished 10". (l) Between Oct. 26 and this date the Telescope tube was sent to Mr Simms to be adapted to the use of the collimators. On replacing it the pointer reading was altered about 67". (m) Very cloudy. (n) Negative correction for Runs.  
 (o) Reduction to wire-reading = +0",020.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Nov.27	(a) B. (w.) I. 1038...	0.58,1	61,6	62,7	63,6	58,5	67,6	+2,2			335.26. 2,08	29,720	35,3	31,7	56,97	81.15.11,18	B.
Nov.29	(b) Zenith Point. ....	4.23,3	30,1	28,2	32,1	25,3	32,9		10,570		291.58.55,87						B.
Nov.30	☉ N.L.....	2.48,4	58,0	58,4	58,5	53,5	61,8		11,405		5.32. 6,49	29,420	41,4	42,4	194,81	111.23.33,43	B.
	☉ S.L.....	0.13,4	22,4	20,8	22,3	17,0	24,6		11,405		366. 4.29,94				201,61	111.56. 3,68	B.
Dec. 1	☉ S.L.....	3.17,2	24,2	25,1	23,4	20,4	28,1		7,092		366.14. 3,11	29,448	41,7	43,4	203,47	112. 5.38,71	B.
	☉ N.L.....	0.55,2	61,2	62,2	62,4	58,4	65,4		7,092		365.41.40,66				196,55	111.33. 9,34	B.
Dec. 4	(d) ☉ N.L.....	2.20,4	28,2	27,7	27,6	23,5	32,0		8,363		6. 7.40,04	29,949	44,2	47,1	203,90	111.59.16,07	B.
	☉ S.L.....	4.43,4	51,0	52,0	51,1	47,1	56,0		8,363		6.40. 3,74				211,24	112.31.47,11	B.
Dec. 5	(e) B. (w.) o. 835....	2. 3,9	9,3	9,2	11,4	5,7	14,3				340.27. 9,12	29,228	42,9	40,8	65,49	86.16.26,74	B.
	(f) B. (w.) o. 963...	1.39,9	47,0	47,6	49,8	44,2	51,7				339.11.46,83				62,67	85. 1. 1,63	B.
	B. (w.) o. 1049...	4.20,2	26,1	27,3	27,9	22,9	30,6				333.24.26,15				51,21	79.13.29,49	B.
	(e) B. (w.) I. 50.....	0.41,0	46,9	45,6	47,9	45,1	50,6				333.45.46,23				51,85	79.34.50,21	B.
Dec. 6	☉ S.L.....	3.30,8	39,7	39,6	38,5	34,7	42,6		4,172		6.55.18,61	29,374	42,2	43,9	212,17	112.47. 2,91	B.
	☉ N.L.....	1. 8,4	16,1	15,0	16,4	11,4	19,6		4,172		6.22.55,26				204,71	112.14.32,10	B.
Dec. 7	☉ N.L.....	4.24,1	30,6	30,3	31,8	26,5	34,6		8,255		6.29.45,52	30,042	40,6	39,6	212,84	112.21.30,49	B.
	☉ S.L.....	1.50,2	56,2	57,6	57,3	52,9	60,1		8,255		7. 2.11,41				220,67	112.54. 4,21	B.
	Neptune.....	2.34,8	42,3	43,3	42,9	38,3	45,6				351.42.41,40	30,114	39,5	34,3	103,58	97.32.37,11	B.
	(a) B. (w.) XXIII. 1090	0. 0,0	3,9	5,4	7,1	1,8	8,7				343.55. 4,48	30,109	38,9	34,1	77,34	89.44.33,95	B.
	4 Ceti.....	1.42,5	47,3	50,1	49,8	44,6	52,3				347.31.47,90				88,23	93.21.28,26	B.
	B. (w.) o. 62....	1.11,1	16,2	18,5	19,4	12,2	20,9				346. 6.16,47				83,70	91.55.52,30	B.
	(f) B. (w.) o. 133....	1.47,3	51,8	53,6	54,2	48,1	55,6				342.16.51,90				72,96	88. 6.16,99	B.
	44 Piscium.....	2.20,3	26,3	29,1	28,3	21,9	30,6				343. 2.26,27				74,95	88.51.53,35	B.
	11 Ceti.....	0.24,7	29,6	31,1	32,9	25,9	34,1				346. 5.29,75				83,66	91.55. 5,54	B.
	B. (w.) o. 1084...	0.45,7	52,0	52,5	54,6	48,9	54,9				337.25.51,50	30,108	38,3	34,8	61,47	83.15. 5,10	B.
	(h)(b) B. (w.) I. 50B...	4.59,3	63,7	64,6	67,6	60,7	68,6		6,466		333.45.56,51				54,08	79.35. 2,72	B.
	B. (w.) I. 149....	3.23,7	29,0	31,0	30,2	23,9	34,4				334.38.28,95				55,77	80.27.36,85	B.
	(h) H. C. 2449 B. ...	1.51,7	56,8	58,5	59,4	53,6	61,1		89,300		332.20.18,89				51,44	78. 9.22,46	B.
	H. C. 2456.....	...	...	...	...	...	...				332.16.57,00				51,33	78. 6. 0,46	B.
	B.A.C. 440.....	3.11,4	18,0	18,6	19,0	12,2	21,7				336.58.17,07				60,49	82.47.29,69	B.
	B. (w.) I. 348...	...	...	...	...	...	...		8,152		336.58.34,76				60,50	82.47.47,39	B.
	100 Piscium.....	1.58,7	64,4	64,6	66,1	59,6	67,4				332.22. 3,62				51,49	78.11. 7,24	B.
	B. (w.) I. 464....	...	...	...	...	...	...		9,154		332.22. 0,41				51,49	78.11. 4,03	B.
	(i) B. (w.) I. 560....	0.37,9	43,4	43,9	44,9	41,4	46,6				336.30.43,07				59,53	82.19.54,73	B.
Dec. 8	(b)(k) H. C. 4061....	4.47,5	54,7	52,9	55,2	53,3	56,5	+4,6			328. 9.53,32	29,541	45,2	47,1	42,36	73.58.47,86	B.
Dec. 9	(l) (b)☉ S.L.....	4.19,0	24,4	25,3	27,1	22,2	28,1		7,757		7.14.50,17	29,378	42,3	42,4	217,65	113. 6.40,00	B.
	☉ N.L.....	1.51,6	57,2	59,6	58,4	56,5	62,0		7,757		6.42.23,77				209,82	112.34. 5,77	B.
	H. C. 6468.....	2. 4,6	12,4	12,3	11,5	8,6	13,1				321. 2.10,75	29,548	40,2	36,4	32,91	66.50.55,84	B.
	H. C. 6480.....	...	...	...	...	...	...				321. 2. 8,37				32,91	66.50.53,46	B.
	(m) B. (w.) III. 517..	2.20,5	25,3	27,0	27,6	20,8	30,7				330.12.25,68				46,64	76. 1.24,50	B.
	H. C. 6813.....	1.26,2	31,0	32,7	33,6	27,7	37,3				327.21.31,65				42,05	73.10.25,88	B.
	H. C. 6941.....	0.52,8	57,4	58,3	59,3	54,2	62,6				328.15.57,58				43,48	74. 4.53,24	B.
	(b) B.A.C. 1178.....	4.39,5	47,3	46,7	47,4	45,3	47,3				320.44.45,55				32,52	66.33.30,25	B.
(n) B.A.C. 1188.....	...	...	...	...	...	...		2,858		320.46.53,65				32,57	66.35.38,40	B.	
Dec.11	(o) ☉ S.L... ..	0.28,0	34,7	35,4	35,8	29,6	38,2		9,156		367.25.30,45	29,916	37,2	35,4	227,72	113.17.30,35	B.
	☉ N.L.....	3. 2,2	8,7	11,1	8,7	4,9	13,2		9,156		6.53. 5,37				219,47	112.44.57,02	B.
Dec.12	☉ N.L.....	2.18,7	24,8	27,3	25,2	21,3	29,8		7,977		6.57.46,22	30,040	39,6	38,3	220,18	112.49.38,58	B.
	☉ S.L.....	4.44,9	51,3	53,3	51,9	47,3	53,3		7,977		7.30.12,74				228,51	113.22.13,43	B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED CO-LATITUDE = 37°.47'.8",00.

(a) Very faint from mist. (b) Negative correction for Runs. (c) Flaring. (d) The Barometer reading was verified. (e) Bisection doubtful on account of cloud. (f) Cloudy. (g) Very ragged. (h) Reduction to wire-reading = + 0",020. (i) Very faint. (k) Faint and diffused. The Circle dripping with moisture. (l) Ragged. (m) The recorded Circle reading was 5' greater. (n) 'Follows about 50'. (o) 'Bad: without the dark glass, but too bright.'



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refrac- tion.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"						"	"			
Dec.14	(a)(b)⊙ S.L.....	2. 56,2	65,3	64,4	65,3	61,2	65,6	+4,6	7,881	+2	7. 33. 26,46	29,836	48,3	54,4	221,54	113. 30. 20,18	B.
	(b) H. C. 6032 .....	0. 31,8	38,3	36,4	38,4	36,3	38,9				321. 35. 36,78	29,935	50,8	53,8	32,91	67. 24. 21,87	B.
	B. (w.) 1. 269.....	1. 46,9	51,4	52,9	53,6	51,7	54,1				330. 51. 52,05				46,67	76. 40. 50,90	B.
	H. C. 6389.....	3. 56,1	59,6	62,8	62,3	57,3	63,8				324. 4. 0,93				36,30	69. 52. 49,41	B.
Dec.15	(c) ⊙ N.L.....	3. 51,7	55,6	59,4	57,7	54,8	61,6		8,089		7. 9. 16,40	29,874	49,8	53,4	214,88	113. 1. 3,46	B.
	⊙ S.L.....	1. 18,0	23,1	24,0	27,8	19,7	27,0		8,089		7. 41. 42,48				223,14	113. 33. 37,80	B.
Dec.16	⊙ N.L.....	2. 22,1	26,4	28,7	28,2	23,3	31,4		9,890	+2	7. 12. 8,17	29,748	46,1	43,3	219,29	113. 3. 59,64	B.
	(d) ⊙ S.L.....	4. 44,6	49,0	49,5	52,0	47,9	53,0		9,890	+2	7. 44. 30,42				227,69	113. 36. 30,29	B.
	B. (w.) o. 713 ...	0. 2,5	6,9	8,2	10,3	4,5	11,3				344. 35. 7,30	29,812	44,5	38,9	77,65	90. 24. 37,13	B.
	(e) B. (w.) o. 842....	0. 40,2	45,1	45,3	48,1	42,6	48,6				345. 25. 45,08				80,05	91. 15. 17,31	B.
	B. (w.) o. 888....	4. 6,6	10,5	14,8	13,0	6,3	16,0				339. 19. 11,85				64,45	85. 8. 28,48	B.
	B. (w.) o. 963....	1. 39,8	45,5	47,3	47,9	42,8	49,2				339. 11. 45,68				64,17	85. 1. 2,03	B.
	B. (w.) o. 1049...	4. 18,2	22,8	26,7	25,8	18,7	28,4				333. 24. 24,10				52,43	79. 13. 28,71	B.
	B. (w.) 1. 191....	4. 36,4	39,8	43,8	42,3	36,2	45,5				335. 19. 41,38		38,3		56,15	81. 8. 49,71	B.
	B. (w.) 1. 298....	3. 27,4	31,2	35,3	33,3	27,6	36,3				331. 43. 32,38				49,48	77. 32. 34,04	B.
	(f) B. (w.) 1. 370....	3. 25,1	29,5	32,4	30,6	24,1	33,9				330. 43. 29,80				47,75	76. 32. 29,73	B.
	100 Piscium.....	1. 58,5	63,8	65,2	64,4	59,4	66,9				332. 22. 3,38				50,61	78. 11. 6,17	B.
	(g) B. (w.) 1. 464....	...	...	...	...	...	...		9,148		332. 22. 0,29				50,61	78. 11. 3,08	B.
	B. (w.) 1. 560....	0. 42,2	45,5	47,8	48,8	43,8	50,5				336. 30. 46,55	29,820	43,6	38,3	58,53	82. 19. 57,26	B.
	B. (w.) 1. 681....	0. 27,8	32,0	33,2	34,8	29,1	36,6				333. 55. 32,33				53,48	79. 44. 37,99	B.
	H. C. 3527.....	3. 12,8	17,2	18,7	17,2	11,3	20,6				329. 33. 16,80				45,80	75. 22. 14,78	B.
	B. (w.) 1. 909....	1. 15,8	9,3	12,5	13,0	6,5	14,0				338. 26. 12,03				62,59	84. 15. 26,80	B.
	B. (w.) 1. 916....	...	...	...	...	...	...		13,168		338. 24. 45,10				62,52	84. 13. 59,80	B.
	B. (w.) 1. 988....	3. 34,0	39,3	41,6	40,2	35,3	42,4				333. 13. 39,35				52,18	79. 2. 43,71	B.
	(d) Zenith Point....	4. 8,9	12,4	12,2	15,5	6,6	16,2		9,769		291. 58. 55,82						B.
Dec.18	(h) H. C. 7617.....	3. 58,1	56,7	62,3	58,1	55,4	62,3	+0,9			323. 18. 58,93	29,388	39,5	34,8	35,99	69. 7. 47,46	B.
	B. (w.) 1. 103...	0. 13,0	11,8	14,5	16,5	8,4	19,0				330. 0. 13,87				46,21	75. 49. 12,62	B.
	55 Tauri.....	0. 51,6	50,8	53,3	54,5	48,2	56,5				328. 0. 52,52				42,99	73. 49. 48,05	B.
	B. (w.) 1. 306....	1. 16,4	14,7	17,7	18,3	10,6	21,9				329. 51. 16,63				45,96	75. 40. 15,13	B.
	B.A.C. 1373.....	3. 33,6	33,2	36,8	34,9	37,4	38,6			+1 1/2	322. 53. 34,31				35,39	68. 42. 22,24	B.
	H. C. 8546.....	2. 64,2	63,0	68,6	64,8	59,0	67,3				320. 13. 4,58				31,75	66. 1. 48,87	B.
	H. C. 8693.....	2. 27,0	24,6	30,1	27,1	21,1	30,5				317. 32. 26,80				28,27	63. 21. 7,61	B.
	H. C. 8694.....	...	...	...	...	...	...		9,136		317. 32. 23,96				28,27	63. 21. 4,77	B.
Dec.19	(i) ⊙ S.L.....	4. 20,6	20,5	26,3	21,5	16,0	25,6		6,198	+1 1/2	7. 50. 20,15	29,658	37,4	36,0	232,15	113. 42. 24,84	B.
	⊙ N.L.....	1. 54,0	55,6	58,7	58,3	50,6	60,5		6,198	+2	7. 17. 54,50				223,52	113. 9. 50,56	B.
Dec.20	B. (w.) 1. 848...	3. 36,4	37,6	41,6	39,7	34,6	44,1				334. 38. 39,12	29,886	40,5	36,5	55,17	80. 27. 46,83	B.
	B. (w.) 1. 857...	...	...	...	...	...	...				334. 36. 12,75				55,09	80. 25. 20,38	B.
	B. (w.) 1. 929....	3. 17,2	18,9	21,3	20,3	14,5	25,0		16,018		333. 53. 19,63				53,73	79. 42. 25,90	B.
	(k) B. (w.) 1. 948 B.	...	...	...	...	...	...		5,376		333. 54. 34,80				53,77	79. 43. 41,11	B.
	B. (w.) 1. 1082...	2. 48,9	50,4	52,2	52,4	46,6	55,4				331. 52. 51,07				50,06	77. 41. 53,67	B.
	(l) H. C. 5993.....	0. 10,1	9,4	10,8	13,2	6,5	15,4				328. 25. 10,90				44,21	74. 14. 7,65	B.
	B. (w.) 1. 192...	0. 38,2	38,7	40,3	41,2	35,7	43,3				332. 15. 39,67				50,74	78. 4. 42,95	B.
	τ <sup>2</sup> Arietis.....	2. 52,4	52,0	55,6	52,8	49,4	55,2				323. 57. 52,98				37,40	69. 46. 42,92	B.
	B.A.C. 1703.....	2. 3,7	4,0	6,6	7,4	0,1	10,3				327. 52. 5,42	29,958	38,6	34,8	43,59	73. 41. 1,55	B.
	H. C. 10252.....	...	...	...	...	...	...		7,008		327. 52. 46,97				43,61	73. 41. 43,12	B.
	H. C. 10440.....	1. 30,4	30,1	33,5	32,0	27,1	33,7				316. 46. 31,18				27,84	62. 35. 11,56	B.
	(m) H. C. 10570.....	3. 60,1	60,2	64,9	60,4	57,4	64,3				315. 49. 1,33				26,62	61. 37. 40,49	B.
	H. C. 10720.....	1. 40,0	40,1	43,0	43,7	37,6	45,9				328. 1. 41,77				43,84	73. 50. 38,15	B.
	H. C. 10889.....	2. 4,0	4,0	7,3	6,2	1,8	7,6				322. 22. 5,22				35,33	68. 10. 53,09	B.
Dec.23	(n) ⊙ N.L.....	0. 17,2	19,0	19,7	21,7	16,2	23,5		12,455		7. 19. 7,49	29,826	45,4	44,4	221,12	113. 11. 1,15	B.
	⊙ S.L.....	2. 41,3	43,9	44,8	44,8	43,8	47,7		12,455		7. 51. 32,41				229,65	113. 43. 34,60	B.
	(o) Zenith Point....	4. 43,1	44,4	47,4	46,5	39,6	49,1		11,383		111. 58. 55,46						B.

ONE REVOLUTION of the MICROMETER = 20", 856. ONE INTERVAL from the middle wire for an Equatorial Star = 16", 6.  
 ASSUMED CO-LATITUDE = 37°. 47'. 8", 00.

(a) Scarcely seen through cloud. (b) The Circle covered with moisture. (c) Extraordinary flickering motion. (d) Negative correction for Runs.  
 (e) 'Vanishing.' (f) 'A fainter north-preceding.' (g) 'Blue colour.' The micrometer-reading has been diminished 1". (h) Dec. 18, 1<sup>h</sup>, Microscope A  
 was adjusted and the Zenith Point was consequently altered. (i) Very tremulous. (k) Reduction to wire-reading = + 0", 020. (l) 'One southward,'  
 (m) 'One of Mag. 9.10 north-following.' (n) Very cloudy. (o) The mercury rather unsteady and the image indistinct at times.



Month and Day.	NAME OF OBJECT.	Microscope Readings.						Correction for Runs for 5'.	Micrometer Reading.	Intervals from the middle wire.	Concluded Circle reading.	Barom.	Thermom.		Refraction.	Apparent N.P.D. from the Observation.	Observer.
		A	B	C	D	E	F						Int.	Ext.			
		"	"	"	"	"	"		r.		0' " "	Inch.	0	0	"	0' " "	
Dec.26	⊙ S.L.....	2.35,0	35,6	39,7	37,2	35,4	40,9	+0,9	9,395		7.47.29,14	29,694	42,4	42,0	228,70	113.39.30,38	B.
	⊙ N.L.....	0.7,0	8,0	10,2	10,3	4,9	12,5		9,395		7.15.0,58				220,22	113.6.53,34	B.
	4 Persei R.....	3.10,3	11,4	13,6	13,0	5,3	16,0		8,856	+ $\frac{3}{4}$	113.33.14,58	29,702	41,3	37,5	1,53	36.12.47,35	B.
	4 Persei.....	4.27,0	27,0	30,6	27,5	21,1	30,8		8,856	+2 $\frac{3}{4}$	290.24.32,02					36.12.43,03	B.
	(a) 29 Persei R.....	2.19,4	22,0	23,4	22,6	14,5	24,8		8,515	+1	109.27.31,11	29,681	39,6	36,9	2,62	40.18.34,97	B.
	29 Persei.....	0.8,3	6,6	10,2	9,6	3,3	10,5		8,515	+2 $\frac{3}{4}$	294.30.19,53					40.18.34,69	B.
Dec.27	⊙ N.L.....	3.12,5	12,6	17,8	13,9	9,3	18,6		10,515		7.12.42,62	29,747	39,8	36,4	222,66	113.4.37,82	B.
	⊙ S.L.....	0.39,9	41,6	42,7	43,5	37,6	45,0		10,515		7.45.10,13				231,23	113.37.13,90	B.
	A Persei R.....	2.38,8	40,2	42,2	40,6	33,2	43,3		9,517		110.2.29,02	29,851	39,2	33,1	2,04	39.43.36,48	B.
	A Persei.....	0.31,3	32,6	33,9	33,3	27,5	34,3		9,517	+1 $\frac{1}{2}$	293.55.21,80					39.43.36,38	B.
	λ Persei R.....	3.19,5	21,8	23,3	21,6	14,0	25,3		8,847	- $\frac{1}{4}$	109.43.24,20				2,38	40.2.41,64	B.
	λ Persei.....	4.19,0	20,6	24,7	20,4	13,7	23,3		8,847	+2	294.14.24,33					40.2.39,25	B.
Dec.28	⊙ S.L.....	2.21,4	21,8	25,6	23,2	18,1	27,5	+2,9	9,201		7.42.18,98	30,312	37,4	34,0	236,02	113.34.27,14	B.
	⊙ N.L.....	4.50,4	52,9	57,1	53,4	48,1	57,0		9,201		7.9.49,43				227,28	113.1.48,85	B.
Dec.31	Zenith Point. ....	4.18,2	22,2	23,2	22,6	16,1	23,7		10,226		111.58.55,86						B.

ONE REVOLUTION of the MICROMETER = 20",856. ONE INTERVAL from the middle wire for an Equatorial Star = 16",6.  
 ASSUMED Co-LATITUDE = 37°.47'.8",00.

(a) The mercury unsteady but the observation 'good.'



MEAN RIGHT ASCENSIONS, JANUARY 1, 1854,

OF THE

FUNDAMENTAL STARS

OBSERVED IN THE YEAR 1854,

AS DEDUCED FROM EACH DAY'S OBSERVATION.



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>α</i> Andromedæ.			Polaris continued.			Rigel continued.			Castor.		
Jan. 21	+1,58	0. 0. 50,99	Nov. 5	-40,28	1. 6. 12,18	Feb. 13	-0,05	5. 7. 31,36	Jan. 28	-0,72	7. 25. 16,84
Feb. 2	+1,72	51,02	6	-40,06	13,40	23	+0,10	31,39	Feb. 3	-0,73	16,86
28	+1,89	50,94	7	-39,95	12,71	24	+0,12	31,38	Mar. 4	-0,50	16,73
Mar. 2	+1,90	50,82	8	-39,67	11,59	28	+0,19	31,31	9	-0,42	16,64
3	+1,90	50,89	8	-39,52	12,36	Mar. 9	+0,35	31,36	13	-0,36	16,72
31	+1,77	50,99	9	-39,35	12,86	Dec. 9	-3,30	31,32	17	-0,29	16,71
Apr. 4	+1,72	50,88	22	-33,93	11,02	16	-3,36	31,34	July 21	+0,40	16,97
9	+1,65	51,02	26	-31,23	11,40	20	-3,39	31,35	Aug. 10	-0,02	16,73
12	+1,60	51,01	<i>α</i> Arietis.			<i>β</i> Tauri.			23	-0,35	16,72
May 4	+1,12	50,86	Jan. 2	+0,62	1. 58. 57,25	Jan. 26	-0,19	5. 17. 4,05	25	-0,41	16,65
Aug. 28	-2,30	50,99	Feb. 28	+1,40	57,20	Feb. 13	+0,02	3,97	Procyon.		
Sept. 20	-2,57	50,98	Apr. 1	+1,64	57,06	23	+0,18	3,97	Jan. 21	-0,58	7. 31. 39,33
21	-2,58	51,05	11	+1,63	57,13	24	+0,20	4,02	28	-0,60	39,53
Nov. 6	-2,53	50,89	Sept. 25	-2,59	57,06	25	+0,22	4,00	Feb. 2	-0,61	39,30
9	-2,50	50,91	Nov. 15	-3,11	57,12	Mar. 9	+0,44	3,95	3	-0,61	39,52
15	-2,45	50,97	23	-3,11	57,20	29	+0,81	3,97	9	-0,60	39,41
Dec. 5	-2,22	51,02	27	-3,11	57,14	July 18	+0,23	3,95	13	-0,58	39,42
7	-2,20	50,92	Dec. 16	-3,03	57,13	Dec. 9	-4,02	3,96	23	-0,51	39,40
16	-2,08	51,00	26	-2,95	57,19	18	-4,14	3,89	28	-0,46	39,44
<i>β</i> Ceti.			<i>α</i> Ceti.			20	-4,16	3,91	Mar. 2	-0,44	39,52
Jan. 2	+0,89	0. 36. 15,69	Jan. 2	+0,23	2. 54. 38,99	<i>α</i> Orionis.			3	-0,43	39,54
Oct. 3	-2,88	15,59	26	+0,50	39,12	Feb. 24	-0,03	5. 47. 16,06	4	-0,41	39,54
26	-2,93	15,63	Oct. 31	-2,95	38,96	Mar. 2	+0,06	16,14	13	-0,29	39,51
31	-2,92	15,55	Nov. 15	-3,09	39,14	3	+0,08	16,16	15	-0,26	39,52
Nov. 2	-2,91	15,60	Dec. 1	-3,16	39,04	6	+0,13	16,07	17	-0,23	39,34
6	-2,89	15,56	5	-3,17	39,11	23	+0,42	16,14	23	-0,14	39,55
9	-2,88	15,65	9	-3,17	39,19	May 23	+1,01	16,07	24	-0,13	39,55
27	-2,75	15,59	18	-3,16	39,17	July 21	+0,23	16,14	31	-0,02	39,50
Dec. 5	-2,68	15,60	20	-3,15	39,35	Dec. 20	-3,66	16,08	May 25	+0,67	39,51
7	-2,66	15,52	26	-3,12	39,13	51 (Hev.) Cephei.			July 21	+0,44	39,59
16	-2,56	15,51	Aldebaran.			July 17	+17,96	6. 30. 38,01	23	+0,41	39,55
Polaris.			Jan. 21	0,00	4. 27. 32,93	25	+15,49	34,70	Aug. 10	+0,11	39,59
Mar. 30	+61,55	1. 6. 12,74	26	+0,05	32,81	Aug. 24	+3,76	34,52	21	-0,11	39,58
31	+61,54	11,26	28	+0,07	32,71	31	+0,56	34,74	23	-0,16	39,53
31	+61,52	11,23	Feb. 2	+0,13	33,01	Sirius.			25	-0,20	39,46
Apr. 1	+61,51	12,93	3	+0,14	32,91	Jan. 20	-0,66	6. 38. 42,80	Pollux.		
4	+61,40	13,17	7	+0,20	32,93	Feb. 2	-0,61	42,83	Jan. 28	-0,71	7. 36. 22,62
5	+61,40	13,06	9	+0,23	32,81	3	-0,61	42,65	Feb. 3	-0,72	22,67
5	+61,41	13,24	13	+0,30	32,92	25	-0,37	42,77	13	-0,69	22,56
7	+61,47	11,79	23	+0,45	32,82	28	-0,31	42,92	23	-0,63	22,60
7	+61,48	11,91	Mar. 3	+0,58	32,90	Mar. 2	-0,28	42,77	28	-0,58	22,58
9	+61,59	13,80	6	+0,63	32,84	3	-0,26	42,93	Mar. 2	-0,56	22,68
10	+61,58	11,91	9	+0,68	32,91	4	-0,24	42,88	3	-0,55	22,53
10	+61,55	11,98	May 4	+1,26	32,78	13	-0,08	42,82	13	-0,40	22,61
11	+61,51	13,67	10	+1,25	32,72	15	-0,05	42,88	15	-0,37	22,58
12	+61,38	12,59	Nov. 23	-3,43	32,67	Apr. 1	+0,27	42,91	17	-0,33	22,53
12	+61,30	11,94	Dec. 5	-3,59	32,80	July 17	+0,65	42,81	23	-0,23	22,61
13	+61,19	11,35	16	-3,67	32,87	20	+0,61	42,85	24	-0,22	22,61
May 16	+48,14	13,04	20	-3,69	32,73	21	+0,59	42,90	29	-0,13	22,42
19	+46,91	13,31	Rigel.			23	+0,57	42,89	31	-0,10	22,56
19	+46,64	13,48	Jan. 2	-0,38	5. 7. 31,34	Aug. 10	+0,20	42,84	May 25	+0,68	22,53
Oct. 3	-42,36	14,33	21	-0,31	31,46	Dec. 26	-3,32	42,80	July 21	+0,40	22,38
3	-42,38	13,06	26	-0,26	31,39				23	-0,23	22,61
4	-42,41	12,12	28	-0,25	31,35				25	-0,28	22,61
7	-42,76	13,87							25	-0,34	22,61
9	-43,31	11,61									
10	-43,38	13,06									
Nov. 31	-41,27	10,12									
2	-40,91	10,99									
2	-40,80	10,91									



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>ε</i> Hydræ.			<i>δ</i> Leonis continued.			<i>Spica</i> continued.			<i>Arcturus</i> continued.		
Jan. 20	-0,57	8.39.26,61	Apr. 1	-1,11	11.6.20,43	Mar. 30	-0,98	13.17.30,45	Oct. 3	-0,15	14.9.0,20
Feb. 3	-0,71	2,40	5	-1,09	20,29	31	-0,99	30,43	12	-0,13	0,22
7	-0,72	2,52	7	-1,08	20,39	Apr. 4	-1,02	30,47	23	-0,16	0,20
13	-0,74	2,61	8	-1,07	20,36	5	-1,03	30,52	31	-0,21	0,25
25	-0,72	2,55	10	-1,06	20,29	6	-1,04	30,34	Nov. 2	-0,23	0,23
Mar. 28	-0,43	2,50	11	-1,06	20,34	7	-1,05	30,43	5	-0,27	0,25
Apr. 5	-0,32	2,57	12	-1,05	20,30	8	-1,06	30,47	8	-0,31	0,20
<i>α</i> Hydræ.			13	-1,04	20,20	10	-1,07	30,29	22	-0,54	0,22
Jan. 28	-0,64	9.20.24,77	15	-1,03	20,43	11	-1,08	30,40	26	-0,61	0,15
Feb. 2	-0,70	24,89	18	-1,00	20,35	12	-1,09	30,46	29	-0,68	0,19
3	-0,70	24,73	May 2	-0,88	20,29	18	-1,12	30,32	30	-0,70	0,20
7	-0,74	24,75	4	-0,86	20,24	19	-1,13	30,40	Dec. 6	-0,85	0,16
9	-0,75	24,83	5	-0,85	(20,00)	May 2	-1,16	30,38	<i>ε</i> Bootis.		
13	-0,77	24,88	<i>β</i> Leonis.			9	-1,17	30,45	Apr. 17	-1,45	14.38.36,74
23	-0,79	24,81	Mar. 16	-1,05	11.41.36,58	25	-1,12	30,48	May 2	-1,60	36,66
25	-0,78	24,84	24	-1,08	36,61	27	-1,12	30,50	4	-1,61	36,73
Mar. 16	-0,70	24,89	29	-1,09	36,68	31	-1,10	30,35	5	-1,61	36,68
17	-0,69	24,76	Apr. 4	-1,09	36,73	June 17	-0,99	30,45	8	-1,63	36,57
24	-0,63	24,81	10	-1,08	36,67	18	-0,70	30,57	9	-1,64	36,67
28	-0,58	24,78	12	-1,08	36,59	19	-0,69	30,47	13	-1,65	36,66
30	-0,56	24,76	13	-1,07	36,69	24	-0,64	30,49	16	-1,66	36,58
31	-0,55	24,75	15	-1,06	36,61	Aug. 11	-0,44	30,38	25	-1,67	36,69
Apr. 1	-0,54	24,63	17	-1,06	36,50	14	-0,41	30,43	31	-1,66	36,71
<i>Regulus.</i>			18	-1,05	36,58	18	-0,37	30,40	June 17	-1,58	36,70
Feb. 7	-0,74	10.0.35,56	May 2	-0,97	36,63	28	-0,28	30,47	July 8	-1,37	36,64
9	-0,77	35,68	9	-0,91	36,57	29	-0,27	30,52	15	-1,28	36,63
13	-0,80	35,43	10	-0,90	36,65	Sept. 4	-0,23	30,41	19	-1,23	36,69
25	-0,88	35,62	15	-0,85	36,82	11	-0,18	30,46	22	-1,19	36,60
28	-0,89	35,64	16	-0,84	36,67	Oct. 31	-0,41	30,39	Ang. 7	-0,94	36,70
Mar. 3	-0,90	35,48	23	-0,78	36,56	Nov. 26	-0,97	30,42	8	-0,93	36,63
6	-0,90	35,62	25	-0,76	36,66	<i>Arcturus.</i>			15	-0,81	36,71
17	-0,87	35,70	31	-0,70	36,56	Apr. 6	-1,22	14.9.0,26	18	-0,77	36,69
28	-0,81	35,66	Sept. 2	-0,08	36,63	10	-1,27	0,23	29	-0,59	36,73
29	-0,80	35,56	<i>β</i> Corvi.			15	-1,32	0,13	30	-0,57	36,68
30	-0,79	35,61	Mar. 23	-0,96	12.26.43,54	18	-1,34	0,35	31	-0,56	36,63
31	-0,79	35,58	24	-0,96	43,53	19	-1,35	0,26	Nov. 1	-0,11	36,61
Apr. 1	-0,78	35,63	28	-0,99	43,68	May 2	-1,43	0,13	26	-0,42	36,62
4	-0,75	35,60	31	-1,00	43,60	4	-1,44	0,21	<i>α</i> <sup>2</sup> Libræ.		
7	-0,72	35,51	Apr. 4	-1,02	43,50	5	-1,44	0,23	Apr. 17	-1,12	14.42.48,60
8	-0,71	35,58	5	-1,02	43,61	8	-1,45	0,17	May 2	-1,31	48,59
13	-0,66	35,55	6	-1,03	43,67	9	-1,45	0,23	4	-1,32	48,58
May 4	-0,40	35,57	7	-1,03	43,65	15	-1,46	0,32	5	-1,33	48,58
10	-0,33	35,68	8	-1,03	43,59	16	-1,47	0,21	8	-1,36	48,56
11	-0,32	35,67	10	-1,04	43,50	18	-1,47	0,22	9	-1,36	48,57
July 22	+0,18	35,54	11	-1,04	43,62	25	-1,46	0,18	11	-1,38	48,48
Sept. 20	-0,36	35,56	12	-1,04	43,69	31	-1,45	0,07	16	-1,41	48,59
24	-0,43	35,54	13	-1,04	43,60	July 5	-1,19	0,06	25	-1,45	48,47
26	-0,47	35,64	15	-1,04	43,57	15	-1,07	0,14	31	-1,47	48,57
<i>δ</i> Leonis.			17	-1,04	43,66	18	-1,03	0,11	June 17	-1,46	48,57
Mar. 13	-1,11	11.6.20,31	18	-1,04	43,63	19	-1,02	0,14	19	-1,45	48,61
16	-1,12	20,31	19	-1,04	43,63	21	-1,00	0,23	July 19	-1,23	48,66
17	-1,12	20,38	May 18	-0,92	43,62	Ang. 8	-0,75	0,18	22	-1,20	48,59
23	-1,13	20,32	23	-0,88	43,61	15	-0,66	0,16	<i>α</i> Coronæ.		
24	-1,13	20,27	<i>Spica.</i>			18	-0,61	0,13	May 2	-1,56	15.28.30,46
28	-1,12	20,33	Mar. 16	-0,79	13.17.30,43	28	-0,47	0,12	13	-1,67	30,38
30	-1,11	20,36	23	-0,89	30,45	29	-0,46	0,25	15	-1,69	30,48
31	-1,11	20,41	28	-0,95	30,37	30	-0,45	0,18	18	-1,71	30,37
						31	-0,44	0,20			
						Sept. 4	-0,39	0,19			
						21	-0,22	0,19			
						Oct. 2	-0,15	0,20			



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>α Coronæ continued.</i>			<i>Antares.</i>			<i>β Lyræ continued.</i>			<i>α Aquilæ continued.</i>		
May 26	-1,75	15.28.30,41	May 26	-1,73	16.20.27,72	Aug. 31	-1,69	18.44.41,49	Feb. 24	+1,42	19.43.39,65
27	-1,75	30,43	July 15	-1,93	27,79	Sept. 2	-1,66	41,62	28	+1,33	39,56
31	-1,77	30,58	21	-1,90	27,92	4	-1,62	41,46	Mar. 1	+1,30	39,73
June 19	-1,75	30,40	28	-1,84	27,78	5	-1,60	41,47	July 5	-1,99	39,62
28	-1,70	30,45	Aug. 22	-1,50	27,76	6	-1,58	41,59	8	-2,03	39,52
July 8	-1,62	30,43	<i>α Herculis.</i>			Nov. 30	+0,02	41,46	15	-2,12	39,54
15	-1,54	30,39				Dec. 9	+0,06	41,46	18	-2,15	39,67
22	-1,45	30,44				<i>ζ Aquilæ.</i>			28	-2,22	39,67
Aug. 1	-1,31	30,47	May 23	-1,56	17.7.59,66				Aug. 8	-2,24	39,59
7	-1,21	30,48	26	-1,60	59,53	July 5	-2,00	18.58.42,05	9	-2,24	39,57
8	-1,20	30,46	June 19	-1,85	59,58	15	-2,08	41,99	12	-2,23	39,57
14	-1,09	30,41	28	-1,89	59,44	Aug. 9	-2,09	42,03	17	-2,22	39,57
15	-1,08	30,42	July 15	-1,88	59,60	21	-2,00	42,06	21	-2,21	39,56
18	-1,03	30,43	19	-1,86	59,44	22	-1,99	42,12	22	-2,20	39,51
28	-0,85	30,42	20	-1,86	59,47	25	-1,96	42,01	24	-2,18	39,58
29	-0,83	30,53	25	-1,82	59,49	26	-1,95	42,04	26	-2,17	39,65
30	-0,81	30,55	28	-1,80	59,60	30	-1,91	41,99	28	-2,16	39,57
31	-0,79	30,39	Aug. 17	-1,58	59,57	31	-1,89	42,01	29	-2,15	39,43
Sept. 4	-0,72	30,47	24	-1,47	59,47	Nov. 30	-0,59	42,03	30	-2,14	39,64
28	-0,33	30,61	25	-1,45	59,46	Dec. 9	-0,56	42,02	31	-2,13	39,51
29	-0,32	30,53	29	-1,39	59,59	<i>γ Aquilæ.</i>			Sept. 2	-2,11	39,55
Oct. 12	-0,16	30,57	30	-1,37	59,40	July 5	-1,97	19.39.19,12	5	-2,08	39,54
Nov. 1	-0,07	30,40	Sept 27	-0,88	59,60	8	-2,01	19,19	11	-2,01	39,61
3	-0,07	30,48	<i>α Ophiuchi.</i>			15	-2,09	19,17	25	-1,81	39,56
6	-0,07	30,32	Jan. 25	+1,62	17.28.9,53	18	-2,12	19,13	27	-1,78	39,63
30	-0,30	30,49	June 19	-1,87	9,63	Aug. 8	-2,20	19,19	28	-1,77	39,60
Dec. 6	-0,39	30,52	July 19	-1,93	9,47	9	-2,20	19,16	29	-1,75	39,60
15	-0,58	30,56	20	-1,93	9,64	12	-2,19	19,16	30	-1,74	39,57
<i>α Serpentis.</i>			25	-1,90	9,55	17	-2,18	19,18	Oct. 2	-1,70	39,65
May 8	-1,41	15.37.4,87	Aug. 7	-1,80	9,48	21	-2,15	19,00	3	-1,68	39,63
11	-1,45	4,79	17	-1,68	9,58	22	-2,15	19,10	5	-1,65	39,59
13	-1,47	4,75	25	-1,59	9,57	24	-2,13	19,07	7	-1,62	39,66
15	-1,49	4,81	29	-1,51	9,61	28	-2,10	19,12	11	-1,55	39,44
18	-1,51	4,78	30	-1,49	9,56	29	-2,09	18,96	Nov. 3	-1,19	39,50
26	-1,58	4,80	Oct. 11	-0,77	9,67	30	-2,08	19,15	30	-0,90	39,60
27	-1,58	4,77	<i>μ<sup>1</sup> Sagittarii.</i>			31	-2,07	19,17	Dec. 7	-0,86	39,67
31	-1,61	4,86	July 25	-2,31	18.5.2,07	Sept. 5	-2,02	19,17	9	-0,85	39,58
June 19	-1,65	4,69	Sept. 2	-1,98	2,13	11	-1,94	19,24	16	-0,83	39,58
28	-1,63	4,80	<i>δ Ursæ Minoris.</i>			25	-1,74	19,18	18	-0,83	39,62
July 15	-1,53	4,77	Jan. 24	+15,64	18.19.26,29	27	-1,71	19,14	26	-0,85	39,66
22	-1,47	4,71	28	+15,21	26,43	28	-1,69	19,05	<i>β Aquilæ.</i>		
Aug. 1	-1,35	4,81	Feb. 1	+14,28	26,00	29	-1,67	19,21	July 5	-1,98	19.48.8,59
7	-1,28	4,79	2	+14,16	26,01	30	-1,66	19,23	8	-2,02	8,51
14	-1,18	4,78	5	+13,41	27,18	Oct. 3	-1,61	19,24	15	-2,11	8,53
18	-1,12	4,78	6	+13,31	27,19	5	-1,58	19,18	28	-2,21	8,48
28	-0,98	4,80	<i>β Lyræ.</i>			7	-1,55	19,14	Aug. 8	-2,24	8,54
29	-0,96	4,95	July 15	-2,12	18.44.41,36	11	-1,48	19,12	9	-2,24	8,47
30	-0,94	4,94	Aug. 9	-2,01	41,44	Nov. 30	-0,81	19,05	12	-2,23	8,51
31	-0,93	4,75	21	-1,86	41,53	Dec. 7	-0,77	19,14	17	-2,22	8,54
<i>δ Ophiuchi.</i>			22	-1,84	41,37	9	-0,76	19,14	21	-2,21	8,59
May 8	-1,36	16.6.41,94	25	-1,79	41,43	16	-0,74	19,13	22	-2,20	8,48
15	-1,46	41,84	30	-1,71	41,44	18	-0,74	19,14	28	-2,17	8,47
27	-1,60	41,89	<i>α Aquilæ.</i>						29	-2,16	8,49
July 15	-1,69	41,93	Jan. 19	+2,05	19.43.39,63	Sept. 2	-2,12	8,32	31	-2,14	8,47
21	-1,65	41,90	Feb. 1	+1,87	39,59	5	-2,09	8,46	Sept. 2	-2,12	8,32
22	-1,64	41,86	2	+1,85	39,75	11	-2,02	8,50	5	-2,09	8,46
28	-1,59	41,91	9	+1,73	39,61	25	-1,83	8,62	15	-1,83	8,62
Aug. 7	-1,48	41,80	22	+1,46	39,65	27	-1,81	8,47	27	-1,81	8,47
22	-1,27	41,93				28	-1,79	8,47	28	-1,79	8,47
29	-1,17	41,96				29	-1,77	8,53	29	-1,77	8,53
30	-1,15	41,96				30	-1,76	8,53	30	-1,76	8,53
						Oct. 2	-1,73	8,61	Oct. 2	-1,73	8,61
						3	-1,71	8,51	3	-1,71	8,51



Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.	Day of Observa- tion.	Correction to Mean R.A.	Mean R.A. Jan. 1, 1854.
	s.	h. m. s.		s.	h. m. s.		s.	h. m. s.		s.	h. m. s.
<i>β Aquilæ continued.</i>			<i>β Aquarii.</i>			<i>α Aquarii continued.</i>			<i>α Pegasi continued.</i>		
Oct. 5	-1,68	19.48.8,49	July 20	-2,14	21.23.52,29	Aug. 29	-2,49	21.58.16,97	Aug. 31	-2,39	22.57.29,49
7	-1,65	8,48	21	-2,16	52,26	31	-2,49	17,06	Sept. 2	-2,41	29,52
11	-1,58	8,56	22	-2,17	52,27	Sept. 2	-2,50	16,97	Sept. 4	-2,42	29,36
Nov. 3	-1,22	8,41	Aug. 15	-2,46	52,20	9	-2,51	17,08	5	-2,43	29,54
15	-1,06	8,52	17	-2,48	52,22	20	-2,48	17,02	6	-2,44	29,38
30	-0,92	8,50	29	-2,52	52,23	21	-2,47	17,02	9	-2,45	29,43
<i>α² Capricorni.</i>			30	-2,52	52,22	27	-2,44	17,11	11	-2,46	29,42
			Sept. 4	-2,51	52,31	29	-2,42	16,97	20	-2,48	29,56
			5	-2,51	52,26	Oct. 5	-2,37	17,12	21	-2,48	29,40
			6	-2,51	52,19	7	-2,36	17,04	27	-2,48	29,42
			11	-2,49	52,27	12	-2,31	17,03	28	-2,48	29,56
			20	-2,44	52,21	23	-2,18	17,11	29	-2,48	29,36
			27	-2,39	52,23	26	-2,14	17,01	Oct. 2	-2,46	29,37
			30	-2,36	52,23	Nov. 3	-2,04	17,07	3	-2,46	29,30
			Oct. 2	-2,34	52,28	6	-2,00	17,12	11	-2,42	29,50
			23	-2,08	52,24	9	-1,97	17,07	12	-2,41	29,32
July 28	-2,42	20.9.57,10	Nov. 3	-1,93	52,22	15	-1,89	17,04	23	-2,32	29,48
Aug. 1	-2,45	57,03	6	-1,88	52,30	<i>α Pegasi.</i>			26	-2,30	29,50
8	-2,48	57,00	9	-1,84	52,28	Aug. 21	-2,29	22.57.29,44	31	-2,25	29,28
17	-2,50	57,07	<i>α Aquarii.</i>			29	-2,38	29,31	Nov. 3	-2,22	29,53
22	-2,49	57,14	July 19	-1,97	21.58.17,11	30	-2,39	29,30	6	-2,19	29,50
Sept. 9	-2,38	57,16	Aug. 26	-2,47	16,98				9	-2,16	29,42
11	-2,36	57,14							15	-2,08	29,51
28	-2,16	57,03							Dec. 7	-1,82	29,41
Oct. 2	-2,10	57,08									
3	-2,09	57,05									
12	-1,95	57,14									







MEAN RIGHT ASCENSIONS, JAN. 1, 1854,

OF STARS

OBSERVED IN THE YEAR 1854,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND

A CATALOGUE

OF

CONCLUDED MEAN RIGHT ASCENSIONS,

JANUARY 1, 1854;

WITH THE ANNUAL VARIATIONS.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	o /		h. m. s.	s.	
1	$\alpha$ ANDROMEDÆ ....					61.43	19	0. 0. 50,96	+ 3,073	
2	B. (w.) o. 81 .....	Nov. 15	8½	-2,37		92. 3	1	0. 5. 11,19	3,070	
3	B. (w.) o. 83 .....	6		-2,59		84. 38	1	0. 5. 18,20	3,074	
4	$\gamma$ Pegasi.....	9		-2,54		75. 38	1	0. 5. 43,35	3,079	
5	B. (w.) o. 140.....	15	9.10	-2,58		90.46	1	0. 8. 49,13	3,070	
6	B. (w.) o. 179 .....	Dec. 7	9	-2,38		87. 1	1	0.10. 38,87	3,074	
7	B. (w.) o. 217 .....	7	10	-2,38		86. 2	1	0.12. 52,17	3,076	
8	B. (w.) o. 273 .....	7	10.11	-2,41	8,96					
		16	8.9	-2,32	8,94	88. 4	2	0.16. 8,95	3,074	
9	44 Piscium.....	Nov. 9	5.6	-2,65		88.52	1	0.17. 55,26	3,073	
10	B. (w.) o. 304.....	Dec. 16	8.9	-2,32		83.41	1	0.18. 16,98	3,083	
11	B. (w.) o. 320.....	16	8.9	-2,33		83.41	1	0.19. 28,52	3,083	
12	B. (w.) o. 365.....	Nov. 9	10.11	-2,65		86.26	1	0.22. 6,56	3,079	
13	B. (w.) o. 420.....	27	10	-2,55		88.39	1	0.25. 12,84	3,074	
14	B. (w.) o. 425.....	9	9.10	-2,69		91.15	1	0.25. 21,04	3,067	
15	B.A.C. 132.....	Dec. 16	8	-2,40		91.25	1	0.26. 1,06	3,067	
16	B.A.C. 147.....	16	7	-2,41		91.19	1	0.28. 3,28	3,067	
17	15 Ceti.....	16	7.8	-2,42		91.19	1	0.30. 36,86	3,067	
18	B. (w.) o. 527.....	Nov. 27	9.10	-2,59		89.52	1	0.31. 19,45	3,071	
19	$\beta$ Ceti.....					108.47	11	0.36. 15,59	2,999	
20	$\delta$ Piscium.....	27		-2,62		83.13	1	0.41. 6,75	3,099	
21	B. (w.) o. 751.....	Dec. 16	10	-2,48		85. 9	1	0.43. 27,88	3,092	
22	B. (w.) o. 904.....	Oct. 23	8½	-2,79	54,61					
		26	8	-2,79	54,54	90. 0	2	0.51. 54,58	3,071	
23	H. C. 1731.....	Dec. 16	9	-2,53		83.26	1	0.52. 56,10	3,106	
24	B. (w.) o. 954.....	Oct. 26	9	-2,80		90.22	1	0.54. 26,43	3,069	
25	B. (w.) o. 1026.....	23	9	-2,65		90.27	1	0.58. 22,02	3,068	
26	$\epsilon$ Piscium.....	Dec. 5		-2,67		85. 7	1	1. 0. 51,11	3,101	
27	B. (w.) o. 1088.....	Oct. 23	10	-2,80		85.45	1	1. 1. 28,52	3,097	
28	B. (w.) I. 3.....	Nov. 8		-2,81		88.14	1	1. 1. 42,00	3,082	
29	B. (w.) I. 43.....	8	9	-2,81	55,17					
		Dec. 16	10	-2,60	55,23	86.21	2	1. 3. 55,20	3,094	
30	B. (w.) I. 65.....	Oct. 23	8	-2,80		79. 2	1	1. 5. 25,69	3,144	
31	POLARIS.....					1.28	36	1. 6. 12,39	17,923	
32	B. (w.) I. 156.....	Nov. 8	8	-2,84		88.13	1	1.10. 44,61	3,083	
33	B. (w.) I. 160.....	Dec. 16	9	-2,64		86.40	1	1.11. 8,99	3,094	
34	B.A.C. 397.....	7	8	-2,72		87.29	1	1.11. 51,11	3,089	
35	B. (w.) I. 328.....	7	8.9	-2,76		83.48	1	1.19. 43,87	3,120	
36	B.A.C. 464.....	7	7.8	-2,80		82.32	1	1.25. 39,21	3,135	
37	B.A.C. 471.....	7	8	-2,80		82.29	1	1.27. 13,49	3,136	
38	B. (w.) I. 482.....	Nov. 27	11	-2,85		85.11	1	1.27. 55,93	3,113	
39	$\nu$ Piscium.....	27		-2,88		85.15	1	1.33. 50,30	3,115	
40	$\omega$ Piscium.....	27		-2,91	41,34					
		Dec. 7		-2,86	41,47	81.35	2	1.37. 41,40	3,152	
41	B. (w.) I. 732.....	Nov. 27	9	-2,94		76.40	1	1.40. 47,91	3,206	
42	B. (w.) I. 787.....	27	8.9	-2,93		83. 9	1	1.44. 4,21	3,141	
43	B. (w.) I. 858.....	27	9	-2,96		78.55	1	1.47. 52,46	3,189	
44	B. (w.) I. 909.....	27	9	-2,96		84.16	1	1.51. 26,66	3,133	
45	B. (w.) I. 965.....	27		-2,97		82.50	1	1.54. 10,04	3,151	
46	B. (w.) I. 973.....	23	5½	-3,01		77.14	1	1.54. 43,99	3,216	
47	$\alpha$ ARIETIS.....					67.14	10	1.58. 57,15	3,349	
48	B. (w.) II. 10.....	23	9.10	-3,03		78.35	1	2. 2. 18,16	3,208	
49	$\xi^1$ Ceti.....	Dec. 8		-3,00		81.50	1	2. 5. 16,04	3,170	
50	B. (w.) II. 79.....	Nov. 23	9	-3,05		78.24	1	2. 6. 22,02	3,214	
51	$\theta$ Arietis.....	23	7½	-3,13	0,77					
		25		-3,13	0,81	70.47	3	2.10. 0,80	3,321	
		Dec. 8		-3,10	0,82					
52	B. (w.) II. 196.....	8	10	-3,03		83.12	1	2.12. 49,66	3,158	
53	H. C. 4363.....	Nov. 25		-3,05		82.55	1	2.13. 48,82	3,162	
54	$\xi$ Arietis.....	23	7	-3,08		80. 3	1	2.16. 59,87	3,203	
55	$\xi^2$ Ceti.....	23	5.6	-3,08		82.12	1	2.20. 24,15	3,176	
56	26 Arietis.....	22		-3,18		70.48	1	2.22. 27,65	3,342	
57	B. (w.) II. 405.....	25		-3,12		77.58	1	2.24. 16,86	3,239	
58	B.A.C. 782.....	22		-3,18		71.46	1	2.25. 27,31	3,332	
59	$\gamma$ Ceti.....	15		-3,05	44,29					
		25		-3,08	44,50	87.23	2	2.35. 44,40	3,109	
60	$\pi$ Arietis.....	15		-3,18	9,14					
		25		-3,23	9,13	73. 9	2	2.41. 9,14	3,333	
61	$\sigma$ Arietis.....	15		-3,17		75.31	1	2.43. 26,41	+ 3,297	

No. 13. By comparison of this star with B. (w.) o. 393 and 399 on July 6, 1860, I found that Bessel's N.P.D. is correct. The observer must have made some mistake in setting.

No. 27. Bessel's R.A. is about 1° greater.

No. 42. The R.A. of B. (w.) is 3° greater. The Camb. observation was verified by comparisons with B. (w.) I. 736 and 829 on July 12, 1860, which at the same time shewed that the N.P.D. from B. (w.) is correct.

No. 49. This is H. C. 4074, the R.A. of which is 30° too small.

No. 52. The observer noted that the estimation of magnitudes was uncertain this night from fog and moisture on the glasses.

No. 57. Taken at only two wires. This is H. C. 4639.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
62	$\rho^1$ Arietis .....	Nov. 15		-3,20		72.52	1	2.46.44,66	+3,345	
63	$\rho^3$ Arietis .....	15		-3,21		72.34	1	2.48.12,05	3,352	
64	B. (w.) II. 885.....	Dec. 5	8	-3,25		76.59	1	2.50.44,82	3,280	
65	$\alpha$ CETI .....					86.29	10	2.54.39,12	3,127	
66	H. C. 5701 .....	5	9½	-3,33	34,05	72.23	2	2.57.34,05	3,368	
		20		-3,32	34,05					
67	B. (w.) II. 1033....	Nov. 25	7	-3,24	23,18	77.23	2	2.58.23,18	3,281	
		Dec. 18		-3,27	23,19					
68	B. (w.) II. 1067....	Nov. 25	9	-3,25	11,55					
		29	8.9	-3,27	11,83	77.24	3	3.0.11,79	3,282	No. 68. Weights have been given to the observations according to the respective number of wires.
		Dec. 20		-3,27	11,88					
69	B. (w.) II. 1082....	Nov. 15	9	-3,18		77.42	1	3.1.0,92	3,278	
70	H. C. 5823.....	Jan. 26		+0,53		73.18	1	3.1.29,02	3,356	No. 70. The R.A. of H. C. is 0,71 less.
71	*	2		+0,26		74.53	1	3.1.44,90	3,328	
72	$\delta$ Arietis.....	Nov. 29		-3,36	17,27					
		Dec. 18		-3,38	17,28	70.50	3	3.3.17,32	3,404	
		20		-3,37	17,40					
73	H. C. 5956.....	Nov. 15	8	-3,26		71.34	1	3.5.37,35	3,393	No. 73. According to the note of the observer, H. C. 5953 and 5956 are not two stars. The R.A. of the former is 1 <sup>s</sup> too small.
74	$\xi$ Arietis .....	25		-3,37	30,96					
		Dec. 18		-3,42	31,02	69.30	3	3.6.31,03	3,434	
		20		-3,41	31,12					
75	*	Jan. 2		+0,23		74.38	1	3.7.19,03	3,339	
76	H. C. 6050.....	26		+0,49		72.58	1	3.8.58,37	3,371	
77	B. (w.) III. 172....	Nov. 15	9	-3,20		77.43	1	3.10.13,91	3,285	
78	H. C. 6125.....	Dec. 18	8	-3,41		71.27	1	3.11.29,06	3,403	
79	H. C. 6149.....	18	9	-3,42		71.21	1	3.12.14,96	3,406	
80	H. C. 6230.....	Nov. 15	9	-3,25	53,89	73.57	2	3.14.53,88	3,360	
		Dec. 20		-3,39	53,86					
81	H. C. 6237.....	Nov. 15	9	-3,25	6,68	73.57	2	3.15.6,78	3,360	
		Dec. 20		-3,39	6,89					
82	H. C. 6317.....	16	8	-3,50	10,61	68.34	2	3.18.10,68	3,470	
		20		-3,49	10,74					
83	H. C. 6350.....	Nov. 15	9	-3,38		66.20	1	3.19.13,82	3,518	
84	H. C. 6369.....	Feb. 3	9	+0,55		71.37	1	3.19.35,40	3,411	
85	$f$ Tauri .....	Nov. 15		-3,22		77.44	1	3.21.49,11	3,295	
86	H. C. 6456.....	Feb. 3	8	+0,53	34,81	71.42	2	3.22.34,85	3,413	
		Dec. 16	8.9	-3,47	34,88					
87	H. C. 6549.....	Feb. 3	8	+0,51	29,14	72.16	2	3.25.29,19	3,405	No. 87. The seconds of R.A. from H. C. are 28,43.
		Dec. 16	8	-3,47	29,24					
88	*	16	8.9	-3,49	3,49	72.8	2	3.28.3,45	3,410	No. 88. The N.P.D. was obtained April 2, 1860, by comparison with H. C. 6649. At the same time the star was judged to be of Mag. 9, and nearly as bright as the comparison star.
		20		-3,49	3,41					
89	H. C. 6649.....	20		-3,49		72.7	1	3.28.42,69	3,411	
90	16 Tauri .....	16	5.6	-3,64		66.10	1	3.36.7,89	3,549	
91	20 Tauri .....	16	4	-3,64		66.6	1	3.37.8,84	3,552	
92	$\eta$ Tauri.....	Nov. 15		-3,41	48,79	66.21	2	3.38.48,82	3,549	No. 92. It was discovered after the transits were printed, that in the observation of Nov. 15, the 2nd and 3rd wires, which were marked doubtful by the observer, were each 1 <sup>s</sup> defective. The R.A. has therefore been increased by 0,4.
		Dec. 20		-3,65	48,84					
93	H. C. 7102.....	Jan. 14	7	+0,17		68.24	1	3.43.2,72	3,508	
94	B. (w.) III. 878....	Dec. 16	8.9	-3,51		75.15	1	3.45.35,91	3,364	
95	B. (w.) III. 884....	16	9	-3,51		75.17	1	3.45.50,97	3,363	
96	H. C. 7230.....	Jan. 14	8½	+0,15		69.39	1	3.47.35,91	3,486	
97	$\Delta^1$ Tauri.....	Dec. 16		-3,68		68.19	1	3.56.4,30	3,526	No. 93. The R.A. of H. C. is 0,61 less.
98	H. C. 7586.....	Jan. 28	9	+0,25		66.53	1	3.57.55,71	3,562	
99	H. C. 7588.....	Dec. 16	8.9	-3,69		68.26	1	3.57.57,44	3,526	No. 96. The star is B. z. 391 3 <sup>h</sup> . 46 <sup>m</sup> . 42 <sup>s</sup> . The R.A. is greater than Bessel's by 0,29, and greater than that of H. C. by 1,02.
100	H. C. 7759.....	Jan. 28	9.10	+0,23		65.33	1	4.3.5,29	3,601	
101	B. (w.) IV. 103.....	28	7.8	+0,17	6,71	75.49	2	4.6.6,65	3,368	No. 98. The R.A. agrees with that of B. z. 393, 3 <sup>h</sup> . 57 <sup>m</sup> . 4 <sup>s</sup> , which is the same star.
		Dec. 8		-3,53	6,58					
102	$\omega^2$ Tauri .....	Jan. 28	5.6	+0,18	42,74	69.47	3	4.8.42,75	3,506	No. 100. The R.A. is greater by 1,32 than that in p. 48, and greater by 1,19 than the R.A. of H. C.
		Dec. 8		-3,65	42,66					
		20		-3,71	42,85					
103	H. C. 7987.....	Feb. 2	8	+0,23		73.46	1	4.9.8,12	3,415	
104	$\phi$ Tauri.....	Jan. 28	4.5	+0,19	22,94	63.0	2	4.11.22,97	3,677	
		Dec. 20		-3,89	23,00					
105	$\gamma$ Tauri.....	8		-3,56		74.44	1	4.11.29,41	3,395	
106	H. C. 8100 .....	Feb. 2	7.8	+0,25	16,87	63.0	2	4.12.16,76	3,678	
		Dec. 20		-3,89	16,64					
107	$\delta^1$ Tauri.....	Nov. 21		-3,41	31,29	72.48	2	4.14.31,22	3,441	
		Dec. 8		-3,61	31,15					
108	63 Tauri.....	Jan. 28	5.6	+0,14		73.35	1	4.15.2,81	3,424	
109	B. (w.) IV. 306.....	Feb. 2	9.10	+0,19		75.40	1	4.15.17,16	+3,377	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
110	δ <sup>2</sup> Tauri.....	Nov. 21		- 3,41	41,16					
		Dec. 8		- 3,61	41,01	72.54	2	4.15.41,09	+ 3,440	
111	κ <sup>1</sup> Tauri .....	20		- 3,78		68. 3	1	4.16.40,51	3,556	
112	κ <sup>2</sup> Tauri .....	20		- 3,78		68. 8	1	4.16.43,68	3,554	
113	B. (w.) iv. 356.....	Jan. 28	8	+ 0,11		74.49	1	4.17.47,44	3,398	
114	H. C. 8333 .....	Feb. 2	7.8	+ 0,19		70.29	1	4.18.29,60	3,499	
115	ν <sup>3</sup> Tauri .....	Dec. 8		- 3,73		67.20	1	4.18.33,92	3,575	
116	ε Tauri .....	5		- 3,62		71. 9	1	4.20. 5,79	3,485	
117	θ <sup>1</sup> Tauri .....	Jan. 28		+ 0,11	14,39					
		Nov. 21		- 3,39	14,39	74.22	3	4.20.14,36	3,410	
		Dec. 8		- 3,59	14,31					
118	θ <sup>2</sup> Tauri .....	Nov. 21		- 3,39	19,90	74.27	2	4.20.19,88	3,408	
		Dec. 20		- 3,66	19,86					
119	H. C. 8434 .....	Feb. 2	7	+ 0,14		66.44	1	4.21.36,48	3,593	
120	85 Tauri.....	Jan. 28	7.8	+ 0,09	31,72	74.28	2	4.23.31,70	3,410	
		Dec. 20		- 3,67	31,67					
121	H. C. 8560 .....	8	10.11	- 3,79		65.48	1	4.25. 1,33	3,621	N <sup>o</sup> . 121. See the note to N <sup>o</sup> . 52. This star is B. z. 395, 4 <sup>b</sup> , 23 <sup>m</sup> . 53 <sup>s</sup> , from which the seconds of R.A. are 1 <sup>s</sup> . 33. The seconds from H. C. are 2 <sup>s</sup> . 51.
122	ALDEBARAN .....					73.47	18	4.27.32,84	3,428	
123	σ <sup>1</sup> Tauri .....	5		- 3,58	49,23					
		8		- 3,61	49,18	74.30	3	4.30.49,22	3,414	
		16		- 3,67	49,26					
124	σ <sup>2</sup> Tauri .....	5		- 3,58	55,66	74.23	2	4.30.55,61	3,417	
		8		- 3,61	55,56					
125	H. C. 8804 .....	20		- 3,89		66.17	1	4.33.14,88	3,617	
126	τ Tauri.....	Jan. 26	6	+ 0,03		67.19	1	4.33.29,29	3,590	
127	95 Tauri.....	Dec. 16	8	- 3,87	23,71	66.12	2	4.34.23,76	3,620	
		20		- 3,90	23,80					
128	H. C. 8876 .....	Jan. 26	9	+ 0,02	31,87	66.12	2	4.35.31,84	3,621	
		Dec. 16	9	- 3,88	31,80					
129	B. (w.) iv. 823.....	Jan. 26	8½	- 0,01		74.48	1	4.38.10,56	3,411	
130	B.A.C. 1478 .....	Dec. 9	7.8	- 3,70		71.32	1	4.40. 9,43	3,490	
131	B. (w.) iv. 866.....	Jan. 26	10	- 0,03		74.47	1	4.40.30,93	3,413	
132	ι Tauri .....	Dec. 9		- 3,70		71.25	1	4.42.50,21	3,495	
133	H. C. 9088 .....	Jan. 26	9	- 0,04		74.49	1	4.43. 3,32	3,413	
134	H. C. 9170 .....	26	8	- 0,04		66.26	1	4.45.46,97	3,624	
135	H. C. 9252 .....	26	8	- 0,06		73.30	1	4.48.23,23	3,448	
136	* .....	Dec. 9	9	- 4,08		64. 8	1	4.49.18,04	3,688	N <sup>o</sup> . 136. Observed in 1852. See the note in p. 48.
137	H. C. 9385 .....	9	7.8	- 3,92		63.33	1	4.52.41,85	3,707	
138	H. C. 9387 .....	9	8.9	- 3,92		63.35	1	4.52.43,90	3,706	
139	H. C. 9409 .....	Jan. 26	8½	- 0,08		69.23	1	4.53. 5,27	3,552	
140	ι Tauri .....	Dec. 9		- 3,77		69.47	1	4.59.10,19	3,546	
141	B. (w.) iv. 1361....	Feb. 13	7	- 0,05	52,42	103.19	2	4.59.52,38	2,765	
		28	7	+ 0,21	52,34					
142	H. C. 9658 .....	Dec. 9	8.9	- 3,77		69.44	1	5. 0.33,77	3,548	
143	H. C. 9721 .....	Jan. 26	8	- 0,13		72.45	1	5. 2.12,16	3,473	
144	H. C. 9786 .....	26	8	- 0,14		64.15	1	5. 5.30,37	3,697	
145	RIGEL.....					98.22	12	5. 7.31,36	2,879	
146	H. C. 9887 .....	26	8	- 0,16		68.22	1	5. 9.47,13	3,588	
147	H. C. 10007 .....	26	8½	- 0,19		61. 3	1	5.13.45,31	3,795	
148	22 Aurigæ .....	Dec. 9	7.8	- 4,03		61.13	1	5.14. 8,31	3,791	
149	β TAURI.....					61.31	11	5.17. 3,97	3,783	
150	H. C. 10263 .....	20	8	- 3,83		71.46	1	5.20.46,96	3,505	
151	H. C. 10280 .....	20	9	- 3,88		71.42	1	5.21.17,13	3,507	
152	H. C. 10528 .....	20	8.9	- 4,11		63.53	1	5.28.35,91	3,720	
153	H. C. 10891 .....	Mar. 3	7.8	+ 0,17		67.32	1	5.38.26,19	3,621	
154	H. C. 11041 .....	3	8	+ 0,14		72. 1	1	5.42. 0,58	3,503	
155	H. C. 11106 .....	3	8½	+ 0,12		73.41	1	5.44.37,06	3,461	
156	α ORIONIS .....					82.37	8	5.47.16,11	3,244	
157	H. C. 11252 .....	3	8	+ 0,10		64.14	1	5.49.50,73	3,715	
158	H. C. 11384 .....	3	8	+ 0,07		73. 4	1	5.53.11,96	3,478	
159	B. (w.) v. 1479.....	Feb. 18		- 0,26	33,43					
		Mar. 2		- 0,06	33,35	104. 5	3	5.57.33,47	2,735	
		3		- 0,05	33,63					
160	B. (w.) v. 1487 ....	2	8	- 0,07	55,47					
		3		- 0,05	55,50	104. 2	3	5.57.55,44	2,737	
		6	8	0,00	55,34					
161	B. (w.) v. 1500.....	2		- 0,07	14,25	104. 7	2	5.58.14,25	2,734	
		3		- 0,05	14,26					
162	H. C. 11934 .....	3	8	- 0,02		71. 2	1	6. 8.34,24	+ 3,530	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
163	B. (w.) VI. 348 ....	Mar. 2		- 0,14	56,99					
		3		- 0,12	56,91	104. 18	3	6. 11. 56,95	+ 2,730	
		6		- 0,07	56,96					
164	*.....	2		- 0,14	48,82	104. 17	2	6. 12. 48,83	2,731	
		3		- 0,12	48,84					
165	B. (w.) VI. 428. ....	2		- 0,15	36,01					
		3		- 0,13	36,04	104. 14	3	6. 14. 36,02	2,732	
		4		- 0,12	36,02					
166	H. C. 12650.....	3	8	- 0,13		70. 43	1	6. 28. 26,12	3,535	
167	51 (Hev.) Cephei ..					2. 45	4	6. 30. 35,12	30,685	
168	B. (w.) VI. 990.....	Feb. 2	6	- 0,57	36,46					
		3		- 0,56	36,44	104. 1	3	6. 32. 36,46	2,740	
		28		- 0,27	36,48					
169	H. C. 12815.....	Mar. 3	8.9	- 0,16		68. 41	1	6. 33. 4,63	3,587	
170	H. C. 12939.....	3	7.8	- 0,20		62. 11	1	6. 36. 25,69	3,767	
171	SIRIUS.....					106. 31	17	6. 38. 42,84	2,680	
172	B.A.C. 2221.....	Feb. 2		- 0,60	11,68					
		3		- 0,59	11,58	104. 16	3	6. 40. 11,63	2,736	
		28		- 0,30	11,63					
173	H. C. 13102.....	Mar. 3	8	- 0,27		71. 51	1	6. 41. 19,03	3,502	
174	B (w.) VI. 1286.....	Feb. 2		- 0,60	11,96					
		3	8½	- 0,59	11,85	104. 14	3	6. 42. 11,93	2,737	
		17	9	- 0,46	11,97					
175	H. C. 13194.....	Mar. 3	8	- 0,24		64. 4	1	6. 43. 53,57	3,709	
176	*.....	Feb. 2	9	- 0,61	39,59					
		28		- 0,33	39,23	104. 4	3	6. 47. 39,46	2,743	
		Mar. 3		- 0,29	39,55					
177	B. (w.) VI. 1474....	Feb. 3	8½	- 0,61	6,38					
		Mar. 2		- 0,31	6,42	103. 58	3	6. 48. 6,43	2,745	
		4		- 0,27	6,48					
178	μ Canis Majoris....	Feb. 2		- 0,62	25,27					
		3	6	- 0,61	25,31	103. 51	3	6. 49. 25,28	2,748	
		28		- 0,34	25,26					
179	H. C. 13457.....	Mar. 3	9	- 0,26		68. 44	1	6. 50. 15,56	3,579	
180	H. C. 13526.....	3	9	- 0,29		63. 13	1	6. 52. 32,76	3,728	
181	H. C. 13611.....	3	9	- 0,29		68. 21	1	6. 54. 53,16	3,587	
182	B. (w.) VI. 1757 ...	Feb. 2	9.10	- 0,63	23,27	103. 58	2	6. 56. 23,30	2,749	
		3	9.10	- 0,63	23,32					
183	B.A.C. 2323.....	Mar. 3	7.8	- 0,29		72. 2	1	6. 57. 48,46	3,491	
184	B. (w) VI. 1827....	Feb. 2	8½	- 0,64	19,33					
		3		- 0,63	19,34	103. 45	3	6. 58. 19,33	2,754	
		28		- 0,38	19,31					
185	H. C. 13758.....	Mar. 15	8½	- 0,11		73. 58	1	6. 58. 52,98	3,442	
186	B. (w.) VI. 1890....	Feb. 2	9	- 0,65		103. 44	1	7. 0. 0,32	2,755	
187	H. C. 13848.....	3	8	- 0,64	41,55					
		Mar. 2		- 0,36	41,68	103. 50	3	7. 0. 41,63	2,753	
		3	9	- 0,35	41,67					
188	B. (w.) VII. 22. ....	Feb. 28	9.10	- 0,39	53,70					
		Mar. 2		- 0,36	53,47	103. 46	3	7. 1. 53,61	2,755	
		4	9	- 0,34	53,65					
189	H. C. 13889.....	15	8	- 0,15		69. 30	1	7. 2. 45,55	3,552	
190	H. C. 13997.....	4	8.9	- 0,33	31,83	70. 16	2	7. 5. 31,83	3,531	
		15	8½	- 0,16	31,84					
191	H. C. 14075.....	4	7.8	- 0,36		65. 12	1	7. 7. 54,70	3,661	
192	*.....	Feb. 3		- 0,66	41,27					
		28	9	- 0,42	41,32	103. 33	3	7. 8. 41,32	2,763	
		Mar. 3	8.9	- 0,38	41,38					
193	H. C. 14113.....	15	8	- 0,17		73. 27	1	7. 8. 46,50	3,450	
194	*.....	Feb. 3	8	- 0,66	3,26					
		28		- 0,43	3,11	103. 25	3	7. 10. 3,14	2,767	
		Mar. 2	7	- 0,39	3,06					
195	H. C. 14228.....	2	8	- 0,40	14,88					
		Feb. 13		- 0,60	14,97	103. 38	3	7. 11. 14,92	2,762	
		Mar. 3	8	- 0,39	14,92					
196	*.....	4		- 0,37	19,90	103. 26	2	7. 11. 19,98	2,767	
		15		- 0,20	20,07					
197	*.....	2		- 0,42	27,01	103. 21	2	7. 14. 27,02	2,770	
		3	10	- 0,40	27,03					
198	B. (w.) VII. 451....	Feb. 28	10.11	- 0,44	51,48	103. 12	2	7. 14. 51,36	+ 2,774	
		Mar. 4	10	- 0,39	51,23					

No. 167. Weights are given to the observations proportional to the respective number of wires.

No. 196. This is the north-following of the two stars observed with the Circle on March 4. The N.P.D. is from the Circle observation. See the Catalogue of N.P.D.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
199	*.....	Feb. 13	9	-0.61	38.57					
	_____	28	9	-0.45	38.69	103. 4	3	7. 16. 38.67	+2,778	
	_____	Mar. 3		-0.41	38.75					
200	*.....	Feb. 3	8	-0.67	49.59					
	_____	13	7½	-0.62	49.59	102. 54	3	7. 19. 49.62	2,783	
	_____	28	8	-0.46	49.67					
201	*.....		3	-0.67	39.09					
	_____	Mar. 2	8½	-0.44	39.20	102. 40	3	7. 21. 39.18	2,789	
	_____	3		-0.43	39.26					
202	*.....	Feb. 13	8.9	-0.62	32.83					
	_____	28	8	-0.47	32.86	102. 50	3	7. 22. 32.84	2,786	
	_____	Mar. 4	7	-0.42	32.82					
203	*.....		2	-0.45	54.09					
	_____	3		-0.44	54.23	102. 29	2	7. 23. 54.16	2,794	
204	B. (w.) VII. 770. ...	Feb. 13	9	-0.63	45.18					
	_____	28		-0.48	45.16	102. 28	2	7. 24. 45.17	2,795	
205	CASTOR.....					57. 48	10	7. 25. 16.76	3,855	
206	H. C. 14814.....	Mar. 4	7	-0.44		72. 46	1	7. 28. 42.16	3,455	
207	PROCYON.....					84. 24	24	7. 31. 39.49	3,191	
208	POLLUX.....					61. 38	21	7. 36. 22.57	3,730	
209	ε HYDRÆ.....					83. 3	7	8. 39. 2.54	3,196	
210	B. (w.) VIII. 1308..		6	-0.75		75. 12	1	8. 50. 41.33	3,330	
211	H. C. 17850.....		16	-0.72		70. 4	1	8. 55. 15.58	3,420	
212	B. (w.) VIII. 1456..		6	-0.75		78. 56	1	8. 57. 10.18	3,258	
213	H. C. 17932.....		16	-0.71		73. 33	1	8. 58. 4.61	3,352	
214	B. (w.) VIII. 1519..		6	-0.78		75. 22	1	9. 0. 3.28	3,318	
215	H. C. 18050.....		16	-0.72		73. 58	1	9. 1. 41.68	3,340	
216	H. C. 18070.....		6	-0.80		73. 49	1	9. 2. 21.22	3,342	
217	π¹ Cancri.....		16	-0.72		74. 25	1	9. 4. 18.09	3,329	
218	H. C. 18141.....		6	-0.81		72. 53	1	9. 4. 31.41	3,356	
219	B. (w.) IX. 127.....		6	-0.78		77. 54	1	9. 6. 45.02	3,267	
220	B. (w.) IX. 191.....		6	-0.80		75. 44	1	9. 9. 48.26	3,301	
221	H. C. 18320.....		16	-0.78		70. 36	1	9. 10. 3.66	3,389	
222	B. (w.) IX. 234. ....	Feb. 9		-0.79		76. 40	1	9. 11. 48.68	3,283	
223	*.....	Mar. 27		-0.64	12.76					No. 223. The transit of March 28 was at only two wires. Weights are given to the observations proportional to the number of wires.
	_____	28		-0.62	12.60	75. 44	2	9. 12. 12.72	3,298	
224	H. C. 18382.....		6	-0.87		68. 57	1	9. 12. 13.56	3,415	
225	H. C. 18414.....		16	-0.77		72. 47	1	9. 13. 18.41	3,346	
226	H. C. 18457.....		6	-0.84		73. 36	1	9. 14. 41.01	3,331	
227	H. C. 18508.....		16	-0.80		71. 14	1	9. 16. 21.36	3,368	
228	α HYDRÆ.....					98. 2	15	9. 20. 24.79	2,950	
229	B. (w.) IX. 493.....		17	-0.75		79. 12	1	9. 23. 10.72	3,232	
230	H. C. 18763.....		28	-0.72		71. 4	1	9. 25. 18.63	3,357	
231	B. (w.) IX. 564.....		17	-0.77		78. 54	1	9. 25. 50.04	3,234	
232	B. (w.) IX. 625.....		28	-0.69		76. 40	1	9. 28. 15.45	3,265	
233	H. C. 18883.....		17	-0.82		73. 7	1	9. 29. 4.80	3,319	
234	B. (w.) IX. 676.....	Feb. 13	7.8	-0.83	38.26					
	_____	Mar. 28	7.8	-0.67	38.18	81. 38	2	9. 30. 38.22	3,190	
235	B. (w.) IX. 709.....		17	-0.79		78. 50	1	9. 32. 8.30	3,229	
236	H. C. 19005.....	Feb. 23	9	-0.91		71. 27	1	9. 33. 25.19	3,338	
237	*.....	Mar. 28	9	-0.73		74. 32	1	9. 34. 27.12	3,290	
238	ψ Leonis.....		17	-0.83		75. 19	1	9. 35. 46.62	3,277	
239	B. (w.) IX. 816.....	Feb. 23	10	-0.87		76. 3	1	9. 37. 25.69	3,264	
240	18 Leonis.....	Mar. 17	5	-0.82		77. 31	1	9. 38. 31.20	3,242	
241	H. C. 19239.....	Feb. 23	7.8	-0.89	9.37					
	_____	Mar. 17	8	-0.85	9.52	74. 43	2	9. 41. 9.45	3,279	
242	B. (w.) IX. 949.....		28	-0.76		76. 40	1	9. 43. 40.49	3,248	
243	B. (w.) IX. 963.....	Feb. 23	9	-0.85	28.13					
	_____	Mar. 17	8	-0.81	28.05	81. 12	2	9. 44. 28.09	3,186	
244	B. (w.) IX. 1017...		17	-0.81		82. 8	1	9. 47. 11.20	3,172	
245	B. (w.) IX. 1029...	Feb. 23	8¾	-0.85		81. 12	1	9. 47. 50.59	3,184	
246	H. C. 19442.....	Mar. 28	7¾	-0.79		74. 35	1	9. 48. 41.24	3,271	
247	ν Leonis.....		17	-0.86		76. 51	1	9. 50. 21.96	3,238	
248	H. C. 19570.....		28	-0.82		73. 38	1	9. 53. 23.71	3,277	
249	B. (w.) IX. 1146...		31	-0.72		83. 27	1	9. 53. 39.06	3,151	
250	B. (w.) IX. 1220...		28	-0.82	33.74					
	_____	Apr. 13	8.9	-0.65	33.61	75. 42	2	9. 56. 33.68	3,246	
251	B. (w.) IX. 1232...	Mar. 31	8	-0.73		84. 17	1	9. 57. 10.02	3,139	
252	REGULUS.....					77. 19	24	10. 0. 35.59	+3,220	

No. 223. The transit of March 28 was at only two wires. Weights are given to the observations proportional to the number of wires.

No. 237. The N.P.D. was obtained Mar. 2, 1860, by comparison with H. C. 19039, and its Mag. was judged to be 9.10.

No. 247. The Mag. is 4½ in H. C., 5½ in B.A.C.; and 7 in B. (w.)  
No. 249. B. (w.) IX. 1148 was considered to be of equal Mag.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	°		h. m. s.	s.	
253	B. (w.) x. 37.....	Apr. 13	8	-0.63		84. 2	1	10. 3. 29.03	+ 3,139	
254	B. (w.) x. 81.....	7	8	-0.73		80. 6	1	10. 5. 46.09	3,182	
255	B. (w.) x. 110.....	13	8½	-0.65		83. 32	1	10. 7. 5.34	3,142	
256	B. (w.) x. 141.....	7	8.9	-0.77		76. 22	1	10. 9. 7.36	3,222	
257	*.....	7	8.9	-0.77		78. 8	1	10. 12. 12.65	3,198	
258	B. (w.) x. 458.....	7		-0.84		76. 52	1	10. 26. 22.09	3,195	
259	H. C. 20522.....	7	7.8	-0.86		76. 23	1	10. 29. 16.29	3,196	No. 257. The N.P.D. was obtained Mar. 2, 1860, by comparison with H. C. 20080.
260	B. (w.) x. 595.....	7	8	-0.84		80. 40	1	10. 33. 44.19	3,152	No. 259. B. (w.) x. 522 has the same N.P.D. but greater R.A. by 15". It was ascertained Mar. 2, 1860, that there is no star in Bessel's place.
261	B. (w.) x. 610.....	10	8.9	-0.82		80. 49	1	10. 34. 16.38	3,150	
262	B. (w.) x. 659.....	10	9	-0.80		84. 55	1	10. 37. 1.38	3,113	
263	B. (w.) x. 673.....	7	9	-0.87		79. 13	1	10. 38. 2.44	3,160	
264	B. (w.) x. 722.....	10	8.9	-0.84		81. 28	1	10. 40. 39.59	3,139	
265	δ LEONIS.....					68. 41	20	11. 6. 20.33	3,192	
266	B. (w.) xi. 149.....	10	9½	-0.93		82. 32	1	11. 9. 36.54	3,109	
267	B.A.C. 3892.....	11	7	-0.97		80. 32	1	11. 18. 44.36	3,111	No. 264. The seconds of R.A. are 40".34 by B. (w.), and 39".47 by H. C. 20802, which is the same star.
268	ε Leonis.....	10		-0.92	51.33					
		11	5.6	-0.91	51.49	92. 12	2	11. 22. 51.41	3,062	
269	B. (w.) xi. 445.....	Mar. 31	8.9	-1.00		83. 20	1	11. 25. 58.90	3,094	
270	B. (w.) xi. 446.....	Apr. 10	8½	-0.99	59.81					
		11	8½	-0.99	60.12	81. 12	2	11. 25. 59.97	3,101	
271	H. C. 22044.....	Mar. 31	9	-1.02		82. 21	1	11. 30. 13.18	3,094	
272	B. (w.) xi. 566.....	Apr. 13	8.9	-0.99		83. 19	1	11. 32. 36.05	3,089	
273	B. (w.) xi. 576.....	Mar. 31	8.9	-0.97		91. 2	1	11. 33. 2.57	3,068	
274	B. (w.) xi. 592.....	Apr. 10	9	-0.97		88. 14	1	11. 33. 58.69	3,075	
275	B. (w.) xi. 657.....	Mar. 28	9	-0.99		88. 17	1	11. 37. 38.04	3,075	
276	ν Virginis.....	23	5	-1.02		82. 39	1	11. 38. 21.31	3,087	
277	B. (w.) xi. 701.....	31	8.9	-1.03		83. 18	1	11. 40. 7.47	3,084	
278	β LEONIS.....					74. 37	20	11. 41. 36.63	3,100	
279	B. (w.) xi. 788.....	24	8.9	-0.96		93. 4	1	11. 45. 59.38	3,066	
280	B. (w.) xi. 797.....	Apr. 13	9	-0.98		90. 13	1	11. 46. 33.71	3,070	
281	B. (w.) xi. 823.....	11	9	-1.01		86. 54	1	11. 47. 57.48	3,074	
282	B. (w.) xi. 848.....	11	8	-1.01		86. 46	1	11. 49. 29.88	3,074	
283	B. (w.) xi. 850.....	13	7¾	-0.97		93. 58	1	11. 49. 33.66	3,066	
284	B. (w.) xi. 867.....	10	7	-0.98		93. 33	1	11. 50. 39.94	3,067	
285	B. (w.) xi. 868.....	Mar. 28	7	-1.00		88. 19	1	11. 50. 44.60	3,072	
286	B. (w.) xi. 897.....	May 2	9	-0.90		93. 9	1	11. 52. 16.71	3,068	
287	δ Virginis.....	Apr. 11	5	-1.03		85. 32	1	11. 52. 28.26	3,074	
288	B.A.C. 4054.....	10	6.7	-1.00		90. 57	1	11. 53. 33.43	3,070	
289	B. (w.) xi. 940.....	Mar. 31	9	-1.04		84. 58	1	11. 54. 56.92	3,073	
290	B. (w.) xi. 948.....	Apr. 13	9	-1.04		95. 39	1	11. 55. 17.33	3,068	
291	B.A.C. 4063.....	May 2	8	-0.91		94. 40	1	11. 56. 7.21	3,069	
292	H. C. 22688.....	Mar. 23	9	-0.96		94. 58	1	11. 57. 16.64	3,069	
293	B. (w.) xi. 978.....	30	8	-1.00		90. 21	1	11. 57. 18.20	3,071	
294	ο Virginis.....	May 25		-0.82		80. 27	1	11. 57. 46.32	3,073	
295	B. (w.) xi. 994.....	Apr. 13	6¾	-0.99		95. 2	1	11. 58. 6.63	3,070	
296	B. (w.) xi. 1002.....	Mar. 31		-1.04		84. 59	1	11. 58. 46.08	3,071	No. 295. B. (w.) xi. 995 was judged at the same time to be of Mag. 8.
297	B. (w.) xi. 1030.....	May 2	8	-1.14		93. 28	1	12. 0. 43.30	3,071	
298	B. (w.) xi. 1040.....	Mar. 23	9.10	-0.97		93. 5	1	12. 1. 26.00	3,071	
299	H. C. 22790.....	Apr. 13	9	-1.00		94. 20	1	12. 1. 30.75	3,071	
300	B. (w.) xii. 28.....	11		-1.02		91. 25	1	12. 2. 59.68	3,071	
301	B. (w.) xii. 45.....	Mar. 24		-0.98		91. 53	1	12. 3. 53.01	3,071	No. 300. Considered to be 'rather brighter' than B. (w.) xii. 26.
302	B.A.C. 4104.....	23	7¾	-1.01		85. 8	1	12. 4. 12.28	3,069	
303	B. (w.) xii. 82.....	Apr. 11	8.9	-1.03		90. 25	1	12. 6. 8.45	3,071	
304	H. C. 22986.....	11	9	-1.03		92. 12	1	12. 8. 38.83	3,073	No. 304. The R.A. of B. (w.) xii. 124, which appears to be the same star, is about 3" greater. See the observer's note, and No. 466 in p. 218, of Vol. XVIII.
305	B. (w.) xii. 200.....	11	7	-1.03		93. 42	1	12. 12. 47.36	3,076	
306	B.A.C. 4201.....	May 2	8	-0.99	26.07					
		10	8	-0.96	26.13	97. 52	2	12. 20. 26.10	3,087	
307	B. (w.) xii. 388.....	2	10	-1.03		91. 16	1	12. 23. 40.40	3,074	
308	β CORVI.....					112. 35	19	12. 26. 43.61	3,135	
309	B. (w.) xii. 490.....	Apr. 7	7½	-1.06		91. 31	1	12. 29. 35.71	3,075	No. 309. This is H. C. 23584, which is the same star as H. C. 23581, the R.A. of the latter being 5" too small. See the note of the observer.
310	B. (w.) xii. 563.....	7	9	-1.05		93. 11	1	12. 33. 55.03	3,082	
311	B. (w.) xii. 599.....	May 2	9	-1.07		92. 4	1	12. 35. 53.81	3,078	
312	B. (w.) xii. 622.....	Apr. 7	9	-1.07		90. 41	1	12. 36. 56.19	3,073	
313	B.A.C. 4294.....	May 2	7	-1.07		95. 30	1	12. 40. 0.79	3,093	
314	B. (w.) xii. 730.....	Apr. 29	10.11	-1.08		96. 37	1	12. 42. 56.91	3,100	
315	B. (w.) xii. 829.....	29	9.10	-1.12	28.43					
		May 2	9.10	-1.12	28.36	90. 2	2	12. 43. 28.40	3,071	No. 314. The sky was probably too misty for estimation of Mag.
316	B. (w.) xii. 882.....	2	9	-1.11		94. 7	1	12. 51. 51.24	3,092	
317	B. (w.) xiii. 55.....	Apr. 8	8.9	-1.08		93. 20	1	13. 4. 35.16	+ 3,092	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
318	B. (w.) XIII. 103...	Apr. 8	7	-1,06		100.35	1	13. 7. 17,59	+ 3,143	
319	B. (w.) XIII. 120...	May 25		-1,09		101.35	1	13. 8. 12,40	3,151	
320	B. (w.) XIII. 163...	Apr. 8	9.10	-1,06		101.20	1	13. 10. 27,78	3,152	
321	B. (w.) XIII. 174...	May 25	8.9	-1,11		95.29	1	13. 10. 58,41	3,110	
322	B. (w.) XIII. 206...	Apr. 8	8	-1,06		99.25	1	13. 12. 48,43	3,140	
323	B. (w.) XIII. 234...	May 25	9	-1,12		98.17	1	13. 14. 29,13	3,133	
324	H. C. 24801.....	Apr. 8	9½	-1,06		100.17	1	13. 15. 38,49	3,149	
325	SPICA.....					100.24	35	13. 17. 30,43	3,152	
326	B. (w.) XIII. 342...	8	9½	-1,07		98. 2	1	13. 21. 42,10	3,137	No. 326. The recorded time was found to be 1 <sup>m</sup> too early by comparison with B. (w.) XIII. 381, Mar. 15, 1860.
327	B. (w.) XIII. 402...	May 3	8	-1,19		101.54	1	13. 24. 40,33	3,172	
328	H. C. 25052.....	19	9.10	-1,20		94.54	1	13. 25. 54,82	3,113	No. 327. This is H. C. 25008, the R.A. of which is about 20 <sup>s</sup> too small, being erroneously reduced from Lalande. B. (w.) XII. 404 was judged to be of Mag. 9.
329	B. (w.) XIII. 494...	19	10	-1,20		99.33	1	13. 29. 13,42	3,156	
330	B. (w.) XIII. 520...	3	8	-1,20		102.48	1	13. 30. 40,61	3,188	
331	B. (w.) XIII. 546...	19	10	-1,21		98.36	1	13. 31. 41,82	3,149	
332	B. (w.) XIII. 573...	3	8	-1,21		99.43	1	13. 33. 39,76	3,162	
333	B. (w.) XIII. 773...	3	9	-1,24		97.22	1	13. 45. 35,16	3,148	
334	η BOOTIS.....	July 18		-0,95	43,81					No. 329. By comparison with B. (w.) XIII. 502, April 3, 1860, the N.P.D. of B. (w.) XIII. 494 was found to be 10' too great. See the observer's note.
		19		-0,94	43,93	70.52	3	13. 47. 43,91	2,861	
		Aug. 18		-0,56	43,99					No. 331. The estimations of Mag. this night appear to have been made when the sky was hazy.
335	B. (w.) XIII. 845...	May 3	10.11	-1,24		99.59	1	13. 49. 7,60	3,179	
336	B. (w.) XIII. 917...	3	8.9	-1,25		96.24	1	13. 53. 25,58	3,142	
337	B. (w.) XIII. 1024..	16	10	-1,30		102.22	1	13. 58. 6,65	3,215	
338	B.A.C. 4697.....	9	8	-1,29		101. 8	1	14. 0. 40,11	3,203	
339	B. (w.) XIV. 9.....	16	9	-1,31		97. 7	1	14. 2. 1,63	3,155	
340	H. C. 25983.....	9	9.10	-1,29		101.44	1	14. 3. 19,05	3,213	
341	B. (w.) XIV. 67....	16	9	-1,32		103. 4	1	14. 5. 2,74	3,232	No. 340. See the note to No. 457 in p. 174.
342	B. (w.) XIV. 78....	15		-1,32		97.59	1	14. 5. 33,61	3,168	
343	ARCTURUS.....					70. 3	43	14. 9. 0,19	2,812	No. 342. The R.A. of B. (w.) is 1 <sup>s</sup> greater. On March 24, 1860, the Camb. observation was confirmed by comparisons with B. (w.) XIV. 79 and 93.
344	H. C. 26214.....	9	9	-1,32	51,70					
		16	8.9	-1,35	51,89	106.48	2	14. 12. 51,80	3,292	
345	B. (w.) XIV. 283....	Apr. 10	8	-1,06		102.16	1	14. 15. 55,46	3,233	
346	H. C. 26306.....	May 9	8½	-1,32	40,95					No. 346. By equatorial observations Mar. 15, 1860, I found that the R.A. of H. C. 26306 is 8,83 too large, Lalande's time at the last wire being the correct one. At the same time B. (w.) XIV. 307 was observed to follow H. C. 26306 about 29 <sup>s</sup> , and to be of somewhat less N.P.D.
		16	8	-1,35	41,06	104. 3	2	14. 16. 41,01	3,259	
347	B. (w.) XIV. 346....	16	8	-1,36		105. 9	1	14. 19. 25,42	3,278	
348	H. C. 26410.....	9	9.10	-1,34		106.19	1	14. 20. 39,13	3,296	
349	H. C. 26413.....	25	9	-1,39		106.25	1	14. 20. 42,78	3,298	
350	B. (w.) XIV. 410...	16	9	-1,37		102.57	1	14. 22. 50,41	3,250	
351	H. C. 26504.....	9	9.10	-1,35	16,27					
		25	8	-1,40	16,20	107.14	2	14. 24. 16,24	3,315	
352	B. (w.) XIV. 477....	16	9.10	-1,37		100.21	1	14. 26. 32,96	3,216	No. 349. This is A. (o.) 13656, with which it agrees nearly in R.A.
353	B. (w.) XIV. 512....	9	9.10	-1,34	21,61					No. 351. The R.A. from H. C. is about 1 <sup>s</sup> less; that from A. (o.) 13705, which is the same star, is 0 <sup>s</sup> .44 greater.
		25	9	-1,41	21,49	103.23	2	14. 28. 21,55	3,263	
354	B. (w.) XIV. 578...	9	10	-1,35	42,74					
		25	9.10	-1,42	42,53	103.21	2	14. 31. 42,64	3,266	
355	H. C. 26821.....	9	9	-1,36		106.15	1	14. 36. 23,10	3,316	
356	ε BOOTIS.....					62.18	24	14. 38. 36,66	2,623	
357	α <sup>2</sup> LIBRÆ.....					105.26	14	14. 42. 48,57	3,311	
358	B. (w.) XIV. 909....	4	10	-1,33	27,57					
		5	9	-1,34	27,55	102.42	2	14. 48. 27,56	3,273	
359	H. C. 27231.....	31	9.10	-1,52		109. 8	1	14. 50. 19,35	3,385	
360	H. C. 27288.....	18	8	-1,46		108. 3	1	14. 52. 8,78	3,368	
361	H. C. 27320.....	31	9.10	-1,51		105.21	1	14. 53. 27,10	3,323	No. 360. The same as A. (o.) 14146, the R.A. of which is 0 <sup>s</sup> .09 less. That of H. C. is 0 <sup>s</sup> .59 less.
362	B. (w.) XIV. 1016..	25		-1,48	22,89					
		26	8.9	-1,48	22,88	101.10	2	14. 54. 22,89	3,253	
363	B. (w.) XIV. 1049..	18	10	-1,45		103. 8	1	14. 56. 0,99	3,288	
364	B. (w.) XIV. 1052..	27	8	-1,50		104.53	1	14. 56. 2,99	3,318	
365	B. (w.) XIV. 1080..	26	11	-1,49	15,03					
		31	10.11	-1,51	15,15	103.14	2	14. 57. 15,09	3,290	
366	B. (w.) XIV. 1099..	25	7.8	-1,49		102.20	1	14. 58. 34,19	3,276	
367	B. (w.) XIV. 1114..	18	9	-1,46		104.51	1	14. 59. 19,17	3,321	
368	H. C. 27516.....	26	8	-1,50		101.28	1	15. 0. 9,84	3,263	
369	H. C. 27567.....	25	7.8	-1,53	28,05					No. 368. On April 3, 1860, no star was found in the place of H. C. 27518, which appears to be the same star as H. C. 27516. See the observer's note.
		27	7.8	-1,54	28,14	109.58	2	15. 1. 28,10	3,416	
370	H. C. 27606.....	18	9.10	-1,50		111.31	1	15. 2. 39,81	3,448	
371	B. (w.) XV. 85.....	18	10	-1,47		103. 9	1	15. 6. 0,03	3,297	
372	B. (w.) XV. 124....	31	9.10	-1,55		103.49	1	15. 7. 45,25	3,311	
373	β LIBRÆ.....	July 3		-1,49	9,41					
		4		-1,49	9,41	98.50	3	15. 9. 9,41	+ 3,223	
		8		-1,46	9,41					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
374	B. (w.) xv. 158.....	May 18	10.11	-1.48		104.44	1	15. 9. 35.62	+ 3,330	
375	H. C. 27880.....	31	8.9	-1.58		108.38	1	15. 11. 8.18	3,405	
376	*.....	27	8.9	-1.54		103.16	1	15. 14. 47.36	3,308	
377	H. C. 28009.....	25		-1.53		103.24	1	15. 15. 9.38	3,310	No. 376. Taken as a comparison star for B. (w.) xv. 259, the N.P.D. of which is 10' too small.
378	H. C. 28075.....	31	9	-1.58		106.35	1	15. 17. 11.84	3,373	No. 377. This star is called B. (w.) xv. 259 in the Catalogue of 1849. See the note to No. 358 in p. 103 of Vol. xviii.
379	H. C. 28168.....	31	7	-1.59		105.12	1	15. 20. 28.24	3,349	
380	B. (w.) xv. 383.....	15	8.9	-1.54		102.13	1	15. 20. 51.74	3,293	
381	B.A.C. 5105.....	27	7.8	-1.62		113.23	1	15. 23. 39.13	3,519	
382	B. (w.) xv. 438.....	15	10	-1.46		102.52	1	15. 24. 9.84	3,308	
383	H. C. 28282.....	31	8.9	-1.65		112.58	1	15. 24. 40.84	3,512	No. 382. The seconds by B. (w.) are 9 <sup>s</sup> .17.
384	$\alpha$ CORONÆ.....					62.47	32	15. 28. 30.46	2,528	
385	H. C. 28495.....	27	7.8	-1.61		109.18	1	15. 31. 29.52	3,444	
386	B. (w.) xv. 597.....	15	9	-1.47		103.34	1	15. 31. 41.77	3,328	
387	$\alpha$ SERPENTIS.....					83. 7	20	15. 37. 4.80	2,940	
388	H. C. 28766.....	27	8	-1.62		108.15	1	15. 40. 43.88	3,433	
389	H. C. 28813.....	15	9	-1.53		112.10	1	15. 42. 30.14	3,520	
390	B. (w.) xv. 845.....	27	9	-1.60		104.12	1	15. 43. 47.49	3,351	
391	47 Libræ.....	15	6.7	-1.50		108.57	1	15. 46. 34.54	3,454	
392	B. (w.) xv. 916.....	27	7.8	-1.61		104.24	1	15. 48. 20.78	3,359	
393	H. C. 29044.....	15	10	-1.51		109.31	1	15. 50. 39.72	3,471	
394	H. C. 29052.....	27	9	-1.63		106.52	1	15. 50. 58.24	3,414	
395	H. C. 29136.....	15	10	-1.55		114.36	1	15. 54. 5.68	3,593	
396	H. C. 29175.....	27	8	-1.63		106. 0	1	15. 55. 15.77	3,399	
397	$\beta^1$ Scorpii.....	July 15		-1.74	57.29					
	—	21		-1.70	57.34	109.24	3	15. 56. 57.31	3,475	
	—	22		-1.69	57.31					
398	H. C. 29281.....	May 27	8.9	-1.67		111.28	1	15. 58. 14.92	3,524	
399	H. C. 29296.....	15	8	-1.49		105.45	1	15. 58. 35.80	3,396	
400	H. C. 29375.....	27		-1.67		110.14	1	16. 1. 2.71	3,499	
401	H. C. 29425.....	15	10	-1.53		111.48	1	16. 2. 11.92	3,536	
402	B.A.C. 5383.....	27	7	-1.66		109. 4	1	16. 3. 29.93	3,474	No. 402. The R.A. in B.A.C. is 1 <sup>s</sup> .12 greater, and is the same as that of $\nu$ Scorpii. In Piazzi and the Greenwich Catalogues the companion north precedes about 1 <sup>s</sup> .
403	$\delta$ OPHIUCHI.....					93.19	11	16. 6. 41.90	3,139	
404	ANTARES.....					116. 6	5	16. 20. 27.79	3,665	
405	H. C. 30869.....	26		-1.69		111.14	1	16. 51. 47.96	3,567	
406	$\alpha$ HERCULIS.....					75.26	15	17. 7. 59.52	2,732	
407	$\theta$ Ophiuchi.....	July 28		-2.13		114.51	1	17. 13. 2.63	3,677	
408	H. C. 31556.....	June 19	3.4	-2.04		112.52	1	17. 14. 22.55	3,623	
409	$\delta$ Ophiuchi.....	19		-2.07	27.50					
	—	July 25		-2.16	27.65	114. 2	2	17. 17. 27.58	3,657	
410	$\alpha$ OPHIUCHI.....					77.20	11	17. 28. 9.57	2,773	
411	58 Ophiuchi.....	25		-2.20		111.36	1	17. 34. 41.12	3,597	
412	4 Sagittarii.....	25		-2.31		113.48	1	17. 50. 52.92	3,660	
413	7 Sagittarii.....	25	8	-2.33		114.17	1	17. 53. 54.42	3,674	
414	B.A.C. 6127.....	25		-2.43		118.28	1	17. 58. 50.27	3,796	
415	$\mu^1$ Sagittarii.....					111. 6	2	18. 5. 2.10	+ 3,586	
416	$\delta$ URSE MINORIS..					3.24	6	18. 19. 26.52	-19,347	
417	$\alpha$ Lyræ.....			-2.17	59.48					
	—	Aug. 3		-2.07	59.74					
	—	9		-2.01	59.79					
	—	16		-1.90	59.83					
	—	22		-1.80	59.71					
	—	25		-1.75	59.84	51.21	10	18. 31. 59.73	+ 2,012	
	—	29		-1.67	59.69					
	—	30		-1.65	59.73					
	—	Nov. 30		+ 0.26	59.72					
	—	Dec. 9		+ 0.31	59.73					
418	B.A.C. 6376.....	Aug. 30		-2.18		109.45	1	18. 37. 23.95	3,544	
419	H. C. 34849.....	July 15	9.10	-2.33		108.23	1	18. 39. 26.32	3,508	
420	H. C. 34917.....	Aug. 30	9	-2.19		109. 3	1	18. 41. 0.73	3,525	
421	$\beta$ Lyræ.....					56.48	13	18. 44. 41.47	2,212	
422	$\xi^2$ Sagittarii.....	22	5.6	-2.36	1.12	111.18	2	18. 49. 1.18	3,580	
	—	30	4	-2.27	1.24					
423	H. C. 35359.....	July 15	9	-2.36		108.46	1	18. 50. 54.07	3,514	
424	H. C. 35497.....	Aug. 30		-2.27		109.26	1	18. 54. 28.87	3,529	
425	H. C. 35499.....	30		-2.26		109.19	1	18. 54. 32.55	3,526	
426	$\sigma$ Sagittarii.....	25		-2.37		111.57	1	18. 55. 55.96	3,594	
427	$\zeta$ AQUILÆ.....					76.21	11	18. 58. 42.03	2,757	
428	$\pi$ Sagittarii.....	22		-2.41		111.15	1	19. 1. 4.79	3,572	No. 429. The N.P.D. was obtained by equatorial comparisons with H. C. 35955 on July 4, 1860. At the same time the Mag. was considered to be 9, and that of H. C. 35955 to be 8.9.
429	*.....	30	9 $\frac{1}{2}$	-2.32	11.21	109.26	2	19. 3. 11.23	+ 3,525	
	—	31		-2.31	11.25					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
430	H. C. 35955 .....	Aug. 31		-2,30		109.28	1	19. 4. 11,14	+ 3,525	No. 430. The R.A. of H. C. is about 1 <sup>s</sup> greater. The Camb. observation was confirmed by equatorial comparisons with H. C. 35991 on July 4, 1860.
431	H. C. 35970 .....	3	10 $\frac{1}{2}$	-2,47		109.44	1	19. 4. 29,42	3,531	
432	H. C. 35988 .....	22	10	-2,45		112.49	1	19. 4. 52,36	3,611	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
433	H. C. 36016 .....	July 15	9 $\frac{1}{2}$	-2,43		112.19	1	19. 5. 24,16	3,597	
434	$\delta$ Sagittarii .....	5	7	-2,26		109.13	1	19. 9. 5,36	3,516	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
435	H. C. 36232 .....	Aug. 22	9.10	-2,47		112.22	1	19. 10. 10,12	3,595	
436	H. C. 36308 .....	31	8 $\frac{3}{4}$	-2,34		109.37	1	19. 11. 25,29	3,524	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
437	B.A.C. 6616 .....	July 15	8	-2,39		109.31	1	19. 13. 3,73	3,521	
438	$\rho^2$ Sagittarii .....	Sept. 30	7.8	-1,90		108.35	1	19. 13. 19,87	3,497	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
439	B.A.C. 6628 .....	Aug. 22		-2,62		118. 9	1	19. 15. 23,90	3,748	
440	$\chi^3$ Sagittarii .....	Sept. 30	7	-2,01		114.15	1	19. 16. 39,32	3,640	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
441	$\delta$ Aquilæ .....	July 5		-2,03	8,19					
	—	15		-2,14	8,20					No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	18		-2,16	8,31					
	—	Aug. 3		-2,22	8,14					No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	8		-2,22	8,24	87.10	8	19. 18. 8,23	3,008	
	—	26		-2,11	8,24					No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	30		-2,08	8,30					
	—	31		-2,07	8,22					No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
442	H. C. 36777 .....	Sept. 30	10	-1,97		109.52	1	19. 21. 28,71	3,524	
443	H. C. 36799 .....	Aug. 30	10	-2,49	4,92	114.15	2	19. 22. 4,92	3,635	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	31		-2,48	4,92					
444	B.A.C. 6671 .....	3	8	-2,55		111.37	1	19. 22. 13,93	3,567	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
445	H. C. 36814 .....	31		-2,48		114.24	1	19. 22. 20,98	3,638	
446	H. C. 36847 .....	July 5	10.11	-2,22		106.42	1	19. 22. 53,16	3,446	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
447	H. C. 36887 .....	15	10.11	-2,35		107. 7	1	19. 23. 35,15	3,455	
448	H. C. 36999 .....	Sept. 25	9.10	-2,07		109. 4	1	19. 26. 25,86	3,500	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
449	$\eta^2$ Sagittarii .....	Aug. 22		-2,60		115.12	1	19. 27. 49,02	3,654	
450	B.A.C. 6707 .....	Sept. 30	7.8	-1,99		109.10	1	19. 27. 55,37	3,502	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
451	$\zeta^3$ Sagittarii .....	25	7.8	-2,17		113.45	1	19. 31. 2,78	3,613	
452	H. C. 37221 .....	July 15	10.11	-2,45		112.23	1	19. 31. 14,15	3,578	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
453	A. (o.) 19840 .....	Aug. 22	9 $\frac{1}{4}$	-2,52		110.52	1	19. 31. 33,72	3,540	
454	H. C. 37306 .....	31		-2,47		111.11	1	19. 33. 12,51	3,547	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
455	$\epsilon^2$ Sagittarii .....	21		-2,46		106.28	1	19. 34. 10,03	3,433	
456	$\gamma$ AQUILÆ .....					79.44	31	19. 39. 19,14	2,851	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
457	H. C. 37659 .....	Oct. 11		-1,96		113. 8	1	19. 41. 33,19	3,587	
458	$\alpha$ AQUILÆ .....					81.31	45	19. 43. 39,60	2,891	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
459	$\beta$ AQUILÆ .....					83.57	29	19. 48. 8,51	2,944	
460	B.A.C. 6923 .....	Aug. 17	9	-2,61		109.48	1	20. 1. 57,49	3,485	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
461	$\alpha^1$ Capricorni .....	July 18		-2,31	33,27					
	—	Aug. 17		-2,50	33,04	102.57	2	20. 9. 33,19	3,330	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
462	$\alpha^2$ CAPRICORNI .....					103. 0	11	20. 9. 57,09	3,331	
463	$\beta$ Capricorni .....	1		-2,49	48,33	105.14	2	20. 12. 48,29	3,375	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	17		-2,55	48,24					
464	B. (w.) xx. 420 .....	Oct. 3	10.11	-2,15		104.45	1	20. 17. 26,14	3,361	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
465	H. C. 39249 .....	July 19		-2,41		108.50	1	20. 18. 1,44	3,446	
466	$\pi$ Capricorni .....	Aug. 1		-2,55	57,67	108.41	2	20. 18. 57,64	3,442	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	17		-2,62	57,60					
467	H. C. 39318 .....	16	8	-2,70		112.30	1	20. 19. 30,52	3,525	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
468	B.A.C. 7049 .....	17	9	-2,71		112.52	1	20. 20. 57,03	3,531	
469	B.A.C. 7053 .....	Oct. 3	8	-2,24		109. 4	1	20. 21. 30,08	3,447	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
470	H. C. 39425 .....	July 20	9	-2,39	23,50	107. 2	2	20. 22. 23,36	3,404	
	—	Oct. 2	9	-2,23	23,22					No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
471	H. C. 39518 .....	Aug. 16	11.12	-2,55		104.12	1	20. 24. 38,00	3,344	
472	B. (w.) xx. 612 .....	July 19		-2,33	42,48	104. 2	2	20. 24. 42,43	3,340	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	Oct. 3	8.9	-2,17	42,38					
473	H. C. 39527 .....	July 22	9 $\frac{1}{4}$	-2,41		106.31	1	20. 24. 50,88	3,391	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
474	B.A.C. 7087 .....	Aug. 17	8.9	-2,55		104.13	1	20. 26. 3,92	3,343	
475	B. (w.) xx. 648 .....	Oct. 2	9.10	-2,19		103.53	1	20. 26. 6,20	3,336	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
476	B. (w.) xx. 686 .....	5	10	-2,16		104. 6	1	20. 27. 14,37	3,339	
477	B.A.C. 7102 .....	3	8	-2,31		111. 5	1	20. 27. 59,11	3,482	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
478	B.A.C. 7115 .....	2	8	-2,27		107.37	1	20. 29. 32,29	3,408	
479	B. (w.) xx. 767 .....	Aug. 16	11.12	-2,54		103. 8	1	20. 30. 17,83	3,318	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
480	H. C. 39793 .....	17	11 $\frac{1}{4}$	-2,66		109.47	1	20. 30. 52,90	3,451	
481	B.A.C. 7145 .....	Sept. 12	6.7	-2,50		106.38	1	20. 32. 20,00	3,385	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
482	* .....	25	10	-2,39		107.54	1	20. 32. 41,59	3,410	
483	B.A.C. 7151 .....	Oct. 2	8	-2,29	2,56	107.53	2	20. 33. 2,52	3,409	No. 431. The sky being cloudy, the estimation of magnitude was uncertain. After this observation the observer attempted without success to observe H. C. 36192, which has the same N.P.D. as H. C. 36239, and is probably the same star with an erroneous R.A. On July 4, 1860, no star was found in the place of H. C. 36192.
	—	5	7.8	-2,25	2,48					
484	B. (w.) xx. 879 .....	July 21	9	-2,34		103.36	1	20. 34. 34,51	+ 3,323	No. 479 and 480. See No. 471.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
485	B. (w.) xx. 900 ....	Sept. 12	8 $\frac{1}{4}$	-2,50		105.42	1	20.35.23,79	+3,363	No. 485. The R.A. agrees with that obtained in 1850. See the note in p. 222 of Vol. XVIII. No. 486. This is A. (o.) 20797, the R.A. from which is 0,21 less. That from B. (w.) is 0,43 greater.
486	B. (w.) xx. 926 .....	28	10	-2,32		105.34	1	20.36.14,73	3,360	
487	H. C. 40019 .....	Aug. 17	8.9	-2,58		104.42	1	20.36.26,04	3,343	
488	B. (w.) xx. 950 .....	28		-2,59	13,40					
		Oct. 2	8 $\frac{1}{4}$	-2,27	13,33	105.34	2	20.37.13,37	3,359	
489	B. (w.) xx. 973 .....	3	10	-2,23	12,42					
		5		-2,20	12,72	103.20	3	20.38.12,65	3,315	
		12	9	-2,10	12,82					
490	B.A.C. 7195 .....	Sept. 12	8 $\frac{1}{4}$	-2,67		113.23	1	20.39.45,06	3,514	
491	B.A.C. 7197 .....	28	9	-2,48		113.16		20.39.50,25	3,511	
492	B.A.C. 7202 .....	July 21	9	-2,41		108.44	1	20.40.6,96	3,418	No. 492. This is H. C. 40124.
493	H. C. 40125 .....	21	9	-2,41		108.44	1	20.40.7,99	3,418	
494	B. (w.) xx. 1068 .....	Oct. 3	9	-2,26		104.11	1	20.41.51,24	3,328	
495	H. C. 40191 .....	12	8	-2,27		111.51	1	20.42.27,78	3,478	
496	B. (w.) xx. 1106 .....	Sept. 12	8	-2,50	13,41					
		28	8.9	-2,34	13,47	104.28	3	20.43.13,43	3,332	
		Oct. 5	8	-2,24	13,40					
497	B.A.C. 7237 .....	Sept. 6	7	-2,75		114.19	1	20.44.27,13	3,526	
498	B. (w.) xx. 1157 .....	Oct. 3	9.10	-2,29	27,70					
		12	8.9	-2,16	27,86	104.58	2	20.45.27,78	3,339	
499	B. (w.) xx. 1170 .....	July 22	10	-2,34		103.45	1	20.45.47,61	3,316	No. 499. At the same time B. (w.) xx. 1184 was considered to be of Mag. 11. Respecting Mr Criswick's estimation of magnitudes in this and other instances, see the Introduction.
500	H. C. 40341 .....	Sept. 12	8	-2,65	19,00					
		28	8.9	-2,48	19,12	111.30	2	20.46.19,06	3,465	
501	H. C. 40391 .....	Aug. 21		-2,65	33,78					
		22		-2,65	33,74	107.40	3	20.47.33,75	3,388	
		24		-2,65	33,73					
502	B. (w.) xx. 1215 .....	Sept. 6	9.10	-2,55		103.59	1	20.47.44,64	3,318	
503	H. C. 40410 .....	Aug. 17	9.10	-2,65		107.48	1	20.47.55,77	3,390	
504	H. C. 40437 .....	Oct. 12	9.10	-2,34		114.13	1	20.48.30,96	3,517	
505	H. C. 40465 .....	Sept. 28	9.10	-2,51		112.7	1	20.49.20,94	3,472	
506	B. (w.) xx. 1275 .....	Oct. 5	9.10	-2,27		104.11	1	20.49.59,86	3,320	No. 504. The R.A. is less than that of A. (o.) 20974-5 by 0,00, and less than that from H. C. by 0,59.
507	B. (w.) xx. 1293 .....	Sept. 6	6	-2,58		105.3	1	20.50.36,31	3,335	
508	B. (w.) xx. 1308 .....	Oct. 12	9	-2,19		104.42	1	20.51.14,02	3,328	
509	H. C. 40547 .....	Aug. 9		-2,60	15,01					
		15		-2,63	15,06	107.27	3	20.51.15,03	3,379	
		17	10.11	-2,64	15,02					
510	H. C. 40599 .....	Sept. 28	8 $\frac{1}{4}$	-2,37		104.4	1	20.52.11,55	3,316	
511	21 Capricorni .....	July 22		-2,40		108.6	1	20.52.38,52	3,389	
512	9 Aquarii .....	Aug. 30	8 $\frac{1}{4}$	-2,59		104.6	1	20.53.5,47	3,315	
513	B. (w.) xx. 1366 .....	Sept. 6	8	-2,59		105.17	1	20.53.32,18	3,336	
514	B.A.C. 7296 .....	Aug. 28		-2,57	1,83					No. 510. The R.A. from H. C. is 8,35 greater. The Camb. observation was confirmed July 21, 1860, by comparison with 9 Aquarii.
		29		-2,57	1,86	102.16	2	20.54.1,85	3,282	
515	A. (o.) 21062 .....	Sept. 28	9	-2,49		110.18	1	20.55.1,05	3,428	
516	H. C. 40736 .....	Oct. 12	10	-2,31		110.12	1	20.55.32,02	3,425	
517	$\eta$ Capricorni .....	July 20	5	-2,40	5,47					
		Aug. 28		-2,72	5,41	110.26	3	20.56.5,48	3,429	
		29		-2,72	5,57					
518	H. C. 40777 .....	Sept. 6	8 $\frac{1}{2}$	-2,73	49,81					
		9	8.9	-2,71	50,13	111.46	2	20.56.49,97	3,453	
519	B. (w.) xx. 1450 .....	July 22	8.9	-2,34		105.7	1	20.56.52,07	3,330	
520	$\theta$ Capricorni .....	Aug. 17	4	-2,66	44,10					No. 527. The R.A. is less than that from H. C. by 0,62, but agrees with the mean from two observations in 1849.
		28		-2,67	44,15	107.49	2	20.57.44,13	3,378	
521	B. (w.) xx. 1486 .....	Sept. 28	9	-2,39		103.35	1	20.58.21,83	3,301	
522	H. C. 40850 .....	Aug. 29	9.10	-2,58	32,26					
		30		-2,58	32,28	102.32	2	20.58.32,27	3,282	
523	B. (w.) xx. 1530 .....	July 21		-2,32	7,86					
		Sept. 6	8.9	-2,60	7,85	104.54	2	21.0.7,86	3,322	
524	$\chi$ Capricorni .....	9	6.7	-2,72		111.47	1	21.0.11,71	3,448	
525	$\nu$ Aquarii .....	July 22	4.5	-2,29	38,28					
		Aug. 28		-2,58	38,31	101.58	2	21.1.38,30	3,270	
526	B. (w.) xx. 1.3 .....	Sept. 28	10	-2,39		103.13	1	21.1.42,32	3,291	No. 527. The R.A. is less than that from H. C. by 0,62, but agrees with the mean from two observations in 1849.
527	H. C. 41000 .....	Oct. 2	8.9	-2,43		107.33	1	21.2.12,09	3,367	
528	B. (w.) xx. 1.28 .....	Sept. 6	8.9	-2,60		104.39	1	21.3.0,06	3,315	
529	B. (w.) xx. 1.43 .....	Aug. 29	9 $\frac{3}{4}$	-2,58	35,62					
		30	9.10	-2,58	35,48	102.8	3	21.3.35,52	3,271	
		Sept. 29	9	-2,37	35,45					
530	B. (w.) xx. 1.54 .....	Aug. 30	10	-2,58		102.6	1	21.4.0,84	3,270	
531	H. C. 41078 .....	Sept. 9	8.9	-2,73		111.36	1	21.4.16,63	3,438	
532	B. (w.) xx. 1.90 .....	Oct. 2	9.10	-2,37		103.25	1	21.5.39,60	+3,291	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
533	ζ Cygni .....	July 21		-2,03	43,44					
	—	22		-2,05	43,36					
	—	Aug. 15		-2,25	43,45	60.22	5	21. 6. 43,42	+2,549	
	—	28		-2,24	43,34					
	—	29		-2,24	43,50					
534	H. C. 41200 .....	Sept. 6	8	-2,63		105.43	1	21. 7. 5,18	3,328	
535	B. (w.) XXI. 129 ...	29	10	-2,42		103.41	1	21. 7. 14,53	3,293	
536	29 Capricorni .....	11	7	-2,61		105.47	1	21. 7. 39,82	3,329	
537	B. (w.) XXI. 155 ...	30	8	-2,41	59,49					
	—	Oct. 5	7.8	-2,35	59,48	103.48	2	21. 7. 59,49	3,295	
538	B. (w.) XXI. 188 ...	Aug. 30		-2,62		103.53	1	21. 9. 13,65	3,295	
539	30 Capricorni .....	Sept. 9	5	-2,68		108.36	1	21. 9. 45,72	3,375	
540	B. (w.) XXI. 214 ...	28	9	-2,62	19,48					No. 540. Weights are given to the observations proportional to the respective number of wires.
	—	30	10	-2,62	19,82	103.56	3	21. 10. 19,55	3,294	
	—	Sept. 29	9	-2,43	19,49					
541	B. (w.) XXI. 223 ...	6	9	-2,61	35,00					
	—	Oct. 2	10	-2,40	35,17	104. 4	2	21. 10. 35,09	3,296	
542	H. C. 41349 .....	5	8	-2,48		110.43	1	21. 10. 49,41	3,411	
543	B. (w.) XXI. 239 ...	Aug. 24	8	-2,61		103.40	1	21. 11. 21,01	3,289	
544	B. (w.) XXI. 248 ...	Sept. 30	11	-2,41		102.58	1	21. 11. 33,08	3,277	
545	* .....	6	8	-2,58	57,20					
	—	9	8.9	-2,57	57,27	102.17	2	21. 12. 57,24	3,265	
546	B. (w.) XXI. 304 ...	11	9	-2,56		102.15	1	21. 13. 40,54	3,263	No. 545. The N.P.D. was obtained July 4, 1860, by equatorial comparison with B. (w.) XXI. 304.
547	18 Aquarii .....	Aug. 24	7	-2,62		103.30	1	21. 16. 12,59	3,281	
548	H. C. 41580 .....	Sept. 11	8	-2,42	45,36					
	—	Oct. 2	8.9	-2,40	45,18	102.24	2	21. 16. 45,27	3,263	
549	19 Aquarii .....	July 21	4	-2,22	22,11					
	—	Aug. 28	7½	-2,57	22,14	100.22	3	21. 17. 22,15	3,230	
	—	30	7¾	-2,58	22,21					
550	B. (w.) XXI. 392 ...	Sept. 6	7	-2,64		104.54	1	21. 17. 23,69	3,303	
551	B. (w.) XXI. 397 ...	20	9	-2,49		100.31	1	21. 17. 26,79	3,232	
552	H. C. 41629 .....	27	7½	-2,63		111.38	1	21. 18. 4,78	3,415	
553	B. (w.) XXI. 418 ...	July 22		-2,26		102.39	1	21. 18. 28,93	3,265	No. 559. The weights given to the observations are in proportion to the number of wires.
554	B. (w.) XXI. 441 ...	Aug. 17	9	-2,60	23,96					
	—	30		-2,64	24,02	104.13	2	21. 19. 23,99	3,289	
555	B.A.C. 7451 .....	28	8¼	-2,61		102.18	1	21. 19. 43,52	3,258	
556	B. (w.) XXI. 463 ...	Sept. 6	8.9	-2,60	14,60					
	—	11	9	-2,58	14,48					
	—	20	8½	-2,53	14,41	102.24	5	21. 20. 14,50	3,259	
	—	30	10	-2,44	14,50					
	—	Oct. 2	9.10	-2,41	14,51					
557	H. C. 41760 .....	Sept. 27	8	-2,51		104.40	1	21. 22. 40,37	3,292	
558	β Aquarii .....					96.13	19	21. 23. 52,25	3,162	No. 559. The weights given to the observations are in proportion to the number of wires.
559	B.A.C. 7485 .....	Aug. 28	9	-2,69	35,99					
	—	29		-2,69	36,04	106.50	2	21. 25. 36,00	3,323	
560	B. (w.) XXI. 644 ...	Sept. 20	9.10	-2,57		103.34	1	21. 27. 22,67	3,270	
561	B. (w.) XXI. 650 ...	30	10.11	-2,48		103.37	1	21. 27. 34,06	3,271	
562	ε Capricorni .....	July 22		-2,36	54,04					
	—	Aug. 29		-2,76	54,05	110. 7	2	21. 28. 54,04	3,371	
563	B. (w.) XXI. 696 ...	Sept. 29	10.11	-2,50		103.28	1	21. 29. 31,04	3,266	
564	B. (w.) XXI. 734 ...	July 21	9.10	-2,17	7,98					
	—	Aug. 30		-2,57	8,12	99. 3	2	21. 31. 8,05	3,199	
565	γ Capricorni .....	July 22		-2,30	59,85					No. 572. The weights of the observations are in proportion to the number of wires.
	—	Aug. 17		-2,65	59,76	107.19	2	21. 31. 59,81	3,322	
566	42 Capricorni .....	29		-2,66		104.42	1	21. 33. 36,32	3,280	
567	B. (w.) XXI. 814 ...	Sept. 29	9	-2,46		100. 4	1	21. 33. 47,81	3,212	
568	B. (w.) XXI. 830 ...	Aug. 31	9	-2,58		99. 8	1	21. 34. 42,45	3,198	
569	45 Capricorni .....	31		-2,68		105.25	1	21. 36. 2,45	3,287	
570	ε Pegasi .....	July 20		-1,98	0,95					
	—	21		-2,00	0,95					
	—	22		-2,01	0,98					
	—	Aug. 12		-2,29	0,91					
	—	17		-2,33	0,99	80.48	9	21. 37. 0,96	2,944	No. 572. The weights of the observations are in proportion to the number of wires.
	—	28		-2,38	0,95					
	—	30		-2,38	0,91					
	—	Sept. 1		-2,38	1,00					
	—	Nov. 3		-1,80	0,99					
571	B.A.C. 7562 .....	Aug. 29	8½	-2,59		99.42	1	21. 37. 7,90	3,204	
572	α Capricorni .....	29	7.8	-2,59	13,03					
	—	Sept. 29	7	-2,47	12,87	99.45	2	21. 37. 12,92	+3,205	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
573	B. (w.) XXI. 911 ...	Oct. 5	9	-2.51		105.48	1	21.37.48,72	+3,291	
574	B. (w.) XXI. 924 ...	3	8.9	-2.49		103.16	1	21.38.23,74	3,253	
575	B. (w.) XXI. 966 ...	Aug. 31	10	-2.64	11.49					
		Sept. 29	9	-2.53	11.23	102.49	2	21.40.11,36	3,245	
576	B. (w.) XXI. 985...	Aug. 28	9 $\frac{1}{4}$	-2.68	14.16					
		30		-2.69	13.94	105.48	2	21.41.14,05	3,286	
577	B.A.C. 7601.....	17	8 $\frac{3}{4}$	-2.65		107.31	1	21.42.10,83	3,309	
578	H. C. 42562.....	Sept. 29	9	-2.51	6.34					
		Oct. 2	9	-2.49	6.38	101.20	3	21.43.6,35	3,221	No. 578. The R.A. from H. C. is about 1° less.
		3	9	-2.47	6.34					
579	B. (w.) XXI. 1036..	Sept. 1	8.9	-2.57		98.5	1	21.43.50,58	3,177	
580	B. (w.) XXI. 1049..	Oct. 12	10	-2.34		98.2	1	21.44.25,93	3,176	
581	B. (w.) XXI. 1051..	Aug. 30	10 $\frac{1}{4}$	-2.58		98.59	1	21.44.36,00	3,188	
582	B.A.C. 7617. ....	29	8	-2.61	11.68					
		31		-2.62	11.76	101.15	2	21.45.11,72	3,218	
583	$\mu$ Capricorni.....	17		-2.59		104.14	1	21.45.19,97	3,259	
584	B. (w.) XXI. 1078..	Oct. 30	9	-2.15		100.28	1	21.45.54,22	3,207	
585	B. (w.) XXI. 1115..	2	10	-2.53		103.18	1	21.47.32,94	3,243	
586	B. (w.) XXI. 1167..	Aug. 29	8	-2.59	54.66					
		30		-2.59	54.64					
		Sept. 1	7.8	-2.60	54.71	99.16	4	21.49.54,67	3,188	
		Nov. 3	8	-2.10	54.66					
587	B. (w.) XXI. 1169..	Aug. 29	9	-2.59	56.90					
		30		-2.59	56.94	99.17	2	21.49.56,92	3,188	
588	B. (w.) XXI. 1187..	Oct. 30	9.10	-2.15		98.16	1	21.50.37,78	3,175	
589	B. (w.) XXI. 1192..	3	9.10	-2.52		102.41	1	21.50.43,72	3,232	
590	B. (w.) XXI. 1231..	7	9	-2.43		98.14	1	21.52.50,43	3,173	
591	B. (w.) XXI. 1233..	12	10	-2.43		102.7	1	21.52.55,64	3,222	
592	B. (w.) XXI. 1240..	Aug. 31	9	-2.66		103.43	1	21.53.12,90	3,242	
593	B. (w.) XXI. 1255..	Oct. 30	10	-2.23		102.42	1	21.53.50,66	3,228	
594	B. (w.) XXI. 1256..	Aug. 30	8 $\frac{1}{2}$	-2.56	55.46					
		Nov. 3	8 $\frac{1}{2}$	-2.09	55.43	96.55	2	21.53.55,45	3,155	
595	H. C. 42937 .....	Sept. 1	8 $\frac{1}{2}$	-2.61		99.59	1	21.54.22,15	3,193	
596	H. C. 42968 .....	20	8 $\frac{1}{2}$	-2.56		98.10	1	21.55.49,98	3,170	
597	B. (w.) XXI. 1300..	Oct. 7		-2.52		103.43	1	21.56.14,26	3,239	
598	$\alpha$ Aquarii .....					91.2	19	21.58.17,05	3,083	
599	B. (w.) XXI. 1410..	7	9	-2.50		100.44	1	22.1.18,31	3,196	
600	B.A.C. 7717 .....	30	7.8	-2.20		98.14	1	22.1.47,42	3,166	
601	$\epsilon^2$ Aquarii.....	Aug. 29		-2.64	48.95					
		Nov. 3		-2.21	48.88	102.17	2	22.2.48,92	3,213	
602	B. (w.) XXII. 91....	Aug. 30		-2.68		104.36	1	22.5.14,55	3,238	
603	$\rho$ Aquarii .....	31		-2.59	30.92					
		Nov. 9		-2.14	30.87	98.33	2	22.12.30,90	3,162	
604	51 Aquarii.....	Aug. 29		-2.54	30.51					
		31		-2.56	30.49	95.35	2	22.16.30,50	3,128	
605	B. (w.) XXII. 3467..	Nov. 9	9 $\frac{1}{4}$	-2.20		101.54	1	22.16.45,65	3,193	
606	H. C. 43764.....	Aug. 30	10	-2.60		99.42	1	22.18.11,62	3,169	
607	B. (w.) XXII. 429...	29	8 $\frac{1}{4}$	-2.56	14.23					
		31		-2.57	14.17	96.39	3	22.20.14,18	3,136	
		Nov. 9		-2.15	14.14					
608	B. (w.) XXII. 434..	Aug. 29	8 $\frac{3}{4}$	-2.56	22.32					
		31		-2.57	22.41	96.41	4	22.20.22,34	3,137	
		Sept. 11	9	-2.60	22.24					
		Nov. 9		-2.16	22.38					
609	$\sigma$ Aquarii .....	Aug. 30		-2.63		101.26	1	22.22.55,12	3,182	
610	B. (w.) XXII. 514..	31	9	-2.54		94.49	1	22.24.38,18	3,116	
611	B. (w.) XXII. 545..	29		-2.54	12.30					
		30		-2.54	12.23	95.13	2	22.26.12,27	3,119	
612	B. (w.) XXII. 571...	Oct. 2	10.11	-2.55		95.48	1	22.27.18,84	3,124	
613	$\kappa$ Aquarii.....	Aug. 29		-2.53	11.66					
		30		-2.54	11.59					
		31		-2.55	11.68	94.59	4	22.30.11,65	3,115	
		Nov. 9		-2.19	11.66					
614	B.A.C. 7897 .....	9	8.9	-2.26		100.7	1	22.32.25,79	3,160	
615	$\zeta$ Pegasi.....	Aug. 9		-2.18		79.56	1	22.34.11,02	2,984	
616	B. (w.) XXII. 727...	29	7 $\frac{3}{4}$	-2.54	30.20					
		30		-2.55	30.09	95.52	2	22.34.30,15	3,121	
617	B. (w.) XXII. 729...	31	10 $\frac{1}{4}$	-2.60		99.13	1	22.34.32,16	3,150	
618	B.A.C. 7919.....	Nov. 9	8	-2.26		99.5	1	22.35.24,33	+3,148	

No. 589. The magnitude estimated in bright moon-light.

No. 596. See the note to the observation of  $\times$  N.P.D. 98°. 10' on Sept. 20, the R.A. of which was confirmed by comparison with H. C. 42960 on July 5, 1860. H. C. 42960 was most probably taken at the middle wire, its R.A. being 27°.4 too small.

No. 612. The Moon being near, the estimation of magnitude is doubtful.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean R.A.	Seconds of R.A. Jan. 1, 1854, as observed.	Approximate N.P.D. Jan. 1, 1854.	Number of Obs.	Concluded Mean R.A. Jan. 1, 1854.	Annual Variation.	Notes.
				s.	s.	° ' "		h. m. s.	s.	
619	B. (w.) xxii. 792..	Oct. 31	8	-2,37		98.20	1	22.37.28,08	+3,140	
620	B. (w.) xxii. 814..	Aug. 30	9½	-2,63		102.19	1	22.38.24,88	3,172	
621	τ¹ Aquarii.....	29		-2,66	57,45					
	—	31		-2,68	57,51	104.50	3	22.39.57,48	3,192	No. 621. Weights have been given to the three observations proportional to the respective number of wires.
	—	Nov. 9		-2,36	57,48					
622	τ² Aquarii.....	Aug. 21		-2,57	51,46					
	—	29		-2,65	51,55	104.22	4	22.41.51,51	3,185	
	—	30		-2,66	51,42					
	—	Nov. 9		-2,36	51,59					
623	B. (w.) xxii. 929..	Sept. 28	9	-2,67		100.19	1	22.44.49,35	3,149	No. 623. The observer's remark attached to this observation arose from an erroneous N.P.D. of B. (w.) xxii. 897 in his working Catalogue.
624	B. (w.) xxii. 937..	Nov. 9	9.10	-2,25		93.24	1	22.45.8,12	3,096	
625	B. (w.) xxii. 962..	Sept. 29	8½	-2,62		96.53	1	22.46.2,51	3,122	
626	B. (w.) xxii. 968..	Aug. 21	11.12	-2,54		103.32	1	22.46.34,60	3,172	No. 626. The small stars observed this night were very faint, probably from atmospheric circumstances.
627	B. (w.) xxii. 987..	Sept. 28	7.8	-2,65		98.19	1	22.47.32,65	3,131	
628	B. (w.) xxii. 1033..	Aug. 21	11	-2,42		94.2	1	22.49.34,40	3,099	
629	B.A.C. 7993.....	Sept. 29	7	-2,62		95.35	1	22.49.43,63	3,110	
630	B. (w.) xxii. 1040..	28	8.9	-2,60		93.56	1	22.50.5,38	3,098	
631	* .....	Aug. 31		-2,63		102.53	1	22.52.59,35	3,159	No. 631. Considered to be somewhat brighter than Proserpine.
632	B. (w.) xxii. 1109..	Sept. 29	9	-2,62		95.20	1	22.53.4,43	3,107	
633	* .....	Aug. 30	9¾	-2,62		102.49	1	22.53.49,40	3,157	
634	B. (w.) xxii. 1130..	21		-2,43		95.9	1	22.53.50,22	3,105	
635	H. C. 45028.....	Sept. 21		-2,62	15,23					No. 635. The seconds of the R.A. from H. C. are 13,34.
	—	28	8	-2,62	15,30					
	—	Oct. 2		-2,61	15,09	94.37	4	22.54.15,17	3,101	
	—	12	8	-2,56	15,06					
636	α PEGASI .....					75.35	27	22.57.29,43	3,163	
637	B. (w.) xxii. 1272..	Sept. 9	8.9	-2,57		95.34	1	23.0.21,82	3,104	
638	H. C. 45397.....	Nov. 6	11.12	-2,35	40,32					
	—	24	10	-2,16	40,42	91.0	2	23.4.40,37	3,076	
639	B. (w.) xxiii. 109..	Oct. 2	9.10	-2,69		99.44	1	23.6.35,54	3,124	
640	B. (w.) xxiii. 187..	2	8.9	-2,62		92.19	1	23.10.5,20	3,082	
641	B. (w.) xxiii. 263..	Sept. 29	9	-2,68		97.26	1	23.13.9,89	3,106	
642	B. (w.) xxiii. 358..	29	10	-2,62		91.1	1	23.17.55,03	3,075	
643	B.A.C. 8184.....	29	7	-2,67		95.20	1	23.21.59,21	3,091	
644	B. (w.) xxiii. 613..	Nov. 3	11	-2,50		91.52	1	23.29.46,82	3,076	No. 644. The star appeared of this magnitude in a hazy sky. See the note of the observer.
645	λ Piscium.....	3		-2,50		89.1	1	23.34.35,90	3,068	
646	B.A.C. 8291.....	3	7¾	-2,54		88.35	1	23.43.38,55	3,068	
647	B. (w.) xxiii. 942..	3	8¼	-2,54		88.5	1	23.46.12,25	3,068	
648	H. C. 46908.....	9	10	-2,55		93.29	1	23.48.37,41	3,075	No. 648. The R.A. of H. C. is 1,2 greater. See the note in p. 115 of Vol. xviii.
649	B. (w.) xxiii. 1059.	9	9.10	-2,55		91.19	1	23.51.42,60	3,072	
650	30 Piscium.....	15		-2,56		96.50	1	23.54.28,46	3,075	
651	B.A.C. 8374.....	6		-2,51	2,55					No. 649. Taken at only two wires.
	—	9		-2,48	2,66	61.47	3	23.59.2,63	+3,068	
	—	15		-2,43	2,68					



MEAN NORTH POLAR DISTANCES, JAN. 1, 1854,

OF THE STARS

OBSERVED IN THE YEAR 1854,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

AND THE

CONCLUDED MEAN NORTH POLAR DISTANCES,

JANUARY 1, 1854;

WITH THE ANNUAL VARIATIONS.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
1	4 Ceti .....	Dec. 7	7	+14,04	42,30	0. 0. 15	1	93. 21. 43,15	- 20,05	
2	α Andromedæ .....	Oct. 2		+17,87	53,96	0. 0. 51	2	61. 42. 57,04	20,05	
		23		+21,25	56,66					
3	B. (w.) o. 62 .....	Dec. 7	8	+15,97	8,27	0. 4. 2	1	91. 56. 9,06	20,05	
4	B. (w.) o. 133 .....	7	9	+16,06	33,05	0. 8. 23	1	88. 6. 33,75	20,04	
5	ρ Andromedæ .....	Oct. 2		+17,49	24,22					
		3		+17,72	23,37	0. 13. 27	3	52. 50. 25,28	20,02	
		23		+21,91	23,20					
6	44 Piscium .....	Dec. 7	7	+15,97	9,32	0. 17. 55	1	88. 52. 10,03	19,99	
7	11 Ceti .....	7	8	+15,02	20,56	0. 22. 26	1	91. 55. 21,35	19,96	
8	κ Cassiopeiæ .....	Oct. 23		+21,72	31,84	0. 24. 44	1	27. 52. 31,78	19,94	
9	δ Andromedæ .....	23		+21,15	16,50	0. 31. 32	1	59. 56. 18,24	19,87	
10	B. (w.) o. 595 .....	Nov. 27	9.10	+17,42	9,43	0. 34. 31	1	87. 1. 10,12	19,83	
11	β Ceti .....	Oct. 3		+17,58	17,51	0. 36. 15	1	108. 47. 19,15	19,80	
12	η Cassiopeiæ .....	23		+21,18	39,77	0. 40. 17	1	32. 57. 40,06	19,75	
13	B. (w.) o. 713 .....	Dec. 16	7.8	+15,21	52,34	0. 41. 4	1	90. 24. 53,08	19,73	
14	B.A.C. 252 .....	Nov. 27	9.10	+18,42	15,86	0. 47. 46	1	83. 56. 16,55	19,62	
15	B. (w.) o. 835 .....	Dec. 5	9	+17,36	44,10	0. 48. 16	1	86. 16. 44,78	19,61	
16	B. (w.) o. 842 .....	16	9	+15,04	32,35	0. 49. 32	1	91. 15. 33,11	19,59	
17	B. (w.) o. 888 .....	Nov. 27	9.10	+18,12	44,60					
		Dec. 16	9	+17,12	45,60	0. 51. 14	2	85. 8. 45,79	19,56	
18	B. (w.) o. 963 .....	5	8	+17,79	19,42					
		16	8	+17,17	19,20	0. 55. 1	2	85. 1. 20,00	19,48	
19	B. (w.) o. 1049 .....	5	7	+19,54	49,03					
		16	7	+19,13	47,84	0. 59. 24	2	79. 13. 49,25	19,39	
20	B. (w.) o. 1084 .....	7	8	+18,26	23,36	1. 1. 16	1	82. 15. 24,06	19,34	
21	B. (w.) i. 50 .....	5	9.10	+19,44	9,65					
		7	9.10	+19,36	22,08	1. 4. 21	2	79. 35. 22,88	19,27	
22	Polaris .....	Mar. 17		+ 5,68	5,89					
		29		+ 2,08	7,29					
		April 17		- 4,02	7,64					
		May 3		- 8,32	8,64					
		4		- 8,52	7,39					
		5		- 8,82	8,14					
		11		-10,22	6,66	1. 6. 12	12	1. 28. 7,60	19,22	
		14		-10,82	7,25					
		16		-11,22	8,32					
		19		-11,72	8,50					
		21		-12,12	7,75					
		24		-12,72	7,09					
	Polaris R .....	Mar. 17		+ 5,68	5,87					
		29		+ 2,08	5,39		3	1. 28. 5,36		
		April 17		- 4,02	6,86					
	Polaris SP .....	May 2		- 7,97	10,91					
		3		- 8,22	9,01					
		5		- 8,67	8,30					
		9		- 9,62	10,30					
		15		-10,92	9,08					
		19		-11,67	8,36					
		23		-12,42	6,87					
		25		-12,77	8,93					
		27		-13,07	8,29					
		30		-13,47	10,71					
		31		-13,57	9,09		20	1. 28. 8,62		
		June 17		-14,92	9,25					
		19		-14,97	8,51					
		23		-15,02	9,05					
		29		-14,87	9,28					
		Sept. 4		- 1,62	6,90					
		11		+ 0,83	9,48					
		15		+ 2,18	8,73					
		16		+ 2,58	8,88					
		26		+ 6,33	8,38					
23	88 Piscium .....	Nov. 27	7	+18,54	40,69	1. 7. 7	1	83. 46. 41,38	19,20	
24	B. (w.) i. 149 .....	Dec. 7	9	+19,08	55,93	1. 10. 9	1	80. 27. 56,70	19,12	
25	B. (w.) i. 191 .....	Nov. 27	9.10	+19,23	8,28					
		Dec. 16	9.10	+18,49	8,20	1. 12. 42	2	81. 9. 8,99	19,06	
26	H. C. 2449 .....	7	7	+19,74	42,20	1. 14. 15	1	78. 9. 43,06	19,01	
27	H. C. 2456 .....	7	8	+19,76	20,22	1. 14. 31	1	78. 6. 21,08	- 19,00	

No. 16. Bessel's R.A. is 1<sup>m</sup> too small.

No. 22. On Mar. 17, Polaris and Polaris R were each bisected 4 times, on Mar. 29, 6 times, and on April 17, 4 times. On Sept. 15 Polaris SP. was bisected 3 times.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
28	B (w.) I. 298 .....	Dec. 16	9.10	+ 19,62	53,66	1. 18. 16	1	77. 32. 54,55	- 18,89	
29	B. (w.) I. 318 .....	Nov. 27	8	+ 18,95	26,91	1. 19. 6	1	82. 9. 27,63	18,87	
30	B.A.C. 440 .....	Dec. 7	6.7	+ 18,37	48,06	1. 20. 44	1	82. 47. 48,76	18,83	
31	B. (w.) I. 348 .....	7	8	+ 18,37	5,76	1. 20. 48	1	82. 48. 6,46	18,82	
32	B. (w.) I. 370 .....	16	10	+ 19,91	49,64	1. 22. 17	1	76. 32. 50,59	18,77	
33	B. (w.) I. 397 .....	Nov. 27	7	+ 18,44	10,87	1. 23. 30	1	84. 8. 11,56	18,74	
34	100 Piscium .....	Dec. 7	7	+ 19,63	26,87	1. 27. 7	2	78. 11. 27,05	18,62	
		16	8	+ 19,34	25,51					
35	B. (w.) I. 464 .....	7	8	+ 19,63	28,66	1. 27. 8	2	78. 11. 23,90	18,62	
		16	9	+ 19,34	22,42					
36	$\pi$ Piscium .....	Oct. 23		+ 19,35	23,26	1. 29. 22	1	78. 36. 24,10	18,55	
37	B. (w.) I. 560 .....	Dec. 7	10	+ 18,45	13,18	1. 32. 7	2	82. 20. 14,94	18,45	
		16	8	+ 18,02	15,28					
38	B. (w.) I. 681 .....	16	9.10	+ 18,78	56,77	1. 37. 14	1	79. 44. 57,56	18,28	
39	$\beta$ Arietis .....	Oct. 23		+ 19,14	28,02	1. 46. 35	1	69. 54. 29,46	17,92	
40	H. C. 3527 .....	Dec. 16	7	+ 19,93	34,71	1. 47. 20	1	75. 22. 35,74	17,89	
41	B. (w.) I. 909 .....	Nov. 27	8	+ 18,22	42,03	1. 51. 27	2	84. 15. 43,73	17,73	
		Dec. 16	8	+ 17,25	44,05					
42	B. (w.) I. 916 .....	Nov. 27	9	+ 18,21	17,46	1. 51. 48	2	84. 14. 17,95	17,71	
		Dec. 16	9	+ 17,26	17,06					
43	4 Persei .....	26		+ 30,16	13,19	1. 52. 36	1	36. 13. 13,81	17,68	
	4 Persei R .....	26		+ 30,16	17,51		1	36. 13. 17,39		
44	B. (w.) I. 988 .....	16	9	+ 18,70	2,41	1. 55. 29	1	79. 3. 3,23	17,56	
45	B. (w.) I. 1038 .....	Nov. 27	9.10	+ 18,73	29,91	1. 58. 27	1	81. 15. 30,65	17,43	
46	$\alpha$ Arietis .....	Oct. 23		+ 18,55	46,85	1. 58. 57	1	67. 13. 48,43	17,41	
47	H. C. 4061 .....	Dec. 8	9	+ 20,02	7,88	2. 4. 31	1	73. 59. 9,02	17,17	
48	H. C. 4528 .....	Nov. 23		+ 19,52	48,90	2. 19. 29	1	74. 0. 50,04	16,45	
49	B. (w.) II. 848 .....	Dec. 20	9	+ 16,77	3,60	2. 48. 38	1	80. 28. 4,37	14,86	
50	B. (w.) II. 857 .....	20	7	+ 16,78	37,16	2. 49. 10	1	80. 25. 37,93	14,83	
51	B. (w.) II. 929 .....	20	7	+ 16,81	42,71	2. 52. 49	1	79. 42. 43,50	14,62	
52	B. (w.) II. 948 .....	20	10	+ 16,77	57,88	2. 53. 54	1	79. 43. 58,67	14,56	
53	B. (w.) II. 1082 .....	20	7.8	+ 16,99	10,66	3. 1. 1	1	77. 42. 11,54	14,12	
54	H. C. 5823 .....	Jan. 26		+ 0,28	52,59	3. 1. 28	1	73. 17. 53,79	14,09	
55	H. C. 5993 .....	Dec. 20	8.9	+ 17,55	25,20	3. 6. 55	1	74. 14. 26,32	13,74	
56	29 Persei .....	26		+ 25,01	59,70	3. 8. 15	1	40. 19. 0,72	13,66	
	29 Persei R .....	26		+ 25,01	59,98		1	40. 19. 0,27		
57	H. C. 6032 .....	14	7	+ 18,87	40,74	3. 8. 27	1	67. 24. 42,32	13,65	
58	H. C. 6050 .....	Jan. 26		+ 0,55	2,25	3. 8. 58	1	72. 58. 3,47	13,61	
59	B. (w.) III. 192 .....	Dec. 20	8	+ 16,47	59,42	3. 11. 13	1	78. 5. 0,29	13,47	
60	B.A.C. 1035 .....	Jan. 14		+ 10,31	47,22	3. 12. 54	1	41. 18. 48,33	13,36	
	B.A.C. 1035 R .....	14		+ 10,31	47,21		1	41. 18. 47,59		
61	$\tau^2$ Arietis .....	Dec. 20	5	+ 18,18	1,10	3. 14. 22	1	69. 47. 2,54	13,27	
62	B. (w.) I. 269 .....	14	8	+ 16,72	7,62	3. 15. 47	1	76. 41. 8,56	13,17	
63	H. C. 6288 .....	Feb. 2	9	+ 0,53	19,80	3. 17. 7	1	72. 46. 20,54	13,08	
64	H. C. 6369 .....	3	8.9	+ 0,95	39,29	3. 19. 35	1	71. 37. 40,61	12,91	
65	H. C. 6389 .....	Dec. 14	7	+ 17,75	7,16	3. 20. 22	1	69. 53. 8,60	12,87	
66	B.A.C. 1089 .....	Jan. 14		+ 9,97	54,24	3. 23. 2	1	42. 32. 55,45	12,69	
	B.A.C. 1089 R .....	14		+ 9,97	54,22		1	42. 32. 54,69		
67	H. C. 6468 .....	Dec. 9	8.9	+ 17,95	13,79	3. 23. 6	1	66. 51. 15,39	12,68	
68	H. C. 6480 .....	9	8	+ 17,95	11,41	3. 23. 24	1	66. 51. 13,01	12,67	
69	H. C. 6518 .....	Jan. 28	8 $\frac{1}{4}$	+ 1,41	46,48	3. 24. 45	1	71. 6. 47,83	12,56	
70	B.A.C. 1096 .....	Feb. 2	7.8	+ 0,73	55,74	3. 25. 49	1	72. 38. 56,99	12,50	
71	B. (w.) III. 517 .....	Dec. 9	8.9	+ 16,34	40,84	3. 28. 21	1	76. 1. 41,81	12,32	
72	B. (w.) III. 550 .....	Feb. 2	8.9	- 0,11	28,62	3. 30. 5	1	75. 18. 29,66	12,20	
73	B. (w.) III. 555 .....	2	8 $\frac{1}{4}$	- 0,11	47,09	3. 30. 16	1	75. 19. 48,13	12,19	
74	B. (w.) III. 603 .....	Jan. 28	8.9	- 0,44	21,88	3. 32. 28	1	76. 55. 22,81	12,03	
75	H. C. 6813 .....	Dec. 9	7	+ 16,42	42,30	3. 34. 21	1	73. 10. 43,51	11,91	
76	B. (w.) III. 688 .....	Feb. 2	10	- 0,31	0,51	3. 36. 30	1	76. 13. 1,48	11,75	
77	H. C. 6924 .....	Jan. 28	9	+ 0,57	52,66	3. 37. 20	1	74. 11. 53,79	11,69	
78	H. C. 6941 .....	Dec. 9	8	+ 16,10	9,34	3. 38. 4	1	74. 5. 10,47	11,65	
79	B.A.C. 1178 .....	Feb. 2	8.9	+ 3,11	45,00	3. 40. 33	2	66. 33. 47,68	11,47	
		Dec. 9	8.9	+ 16,89	47,14					
80	B.A.C. 1188 .....	Feb. 2	6.7	+ 3,11	54,63	3. 41. 18	2	66. 35. 56,55	11,41	
		Dec. 9	7	+ 16,84	55,24					
81	A Persei .....	27		+ 22,06	58,44	3. 45. 46	1	39. 43. 59,42	11,08	
	A Persei R .....	27		+ 22,06	58,54		1	39. 43. 58,80		
82	H. C. 7242 .....	Feb. 2	9 $\frac{1}{4}$	+ 3,14	0,66	3. 47. 56	1	66. 50. 2,26	10,92	
83	H. C. 7460 .....	2	9	+ 3,69	37,78	3. 54. 50	1	65. 27. 39,44	10,42	
84	$\lambda$ Persei .....	Dec. 27		+ 21,07	0,32	3. 55. 43	1	40. 3. 1,32	- 10,35	

No. 52. 'The southern of a double star of Mag. 10.'

No. 64. The seconds of N.P.D. from H. C., inclusive of secular variation, are 27",4.

No. 71. The correction of the recorded N.P.D. was verified on April 3, 1860, by comparisons with B. (w.) III. 474.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
84	$\lambda$ Persei R.....	Dec. 27		+ 21.07	2.71	3. 55. 43	1	40. 3. 2.97	- 10.35	
85	A <sup>1</sup> Tauri .....	Feb. 3	5	+ 2.72	15.64	3. 56. 4	1	68. 19. 17.18	10.33	
86	A <sup>2</sup> Tauri .....	3	6.7	+ 2.69	19.72	3. 56. 42	1	68. 23. 21.26	10.28	
87	H. C. 7617 .....	Dec. 18	8.9	+ 15.53	2.99	3. 58. 34	1	69. 8. 4.48	10.14	
88	H. C. 7646 .....	Feb. 2	8.9	+ 0.89	46.21	3. 59. 36	1	73. 51. 47.36	10.05	
89	B.A.C. 1272.....	Jan. 2	7	+ 1.75	11.07	3. 59. 38	1	73. 3. 12.29	10.05	
90	H. C. 7677 .....	2	9	+ 1.75	51.80	4. 0. 28	1	73. 5. 53.01	9.99	No. 90. This is B. z. 330, 3 <sup>h</sup> . 58 <sup>m</sup> . 30 <sup>s</sup> . H. C. 7671 is the same star, with an error of about 10 <sup>s</sup> in R.A. See the observer's note.
91	H. C. 7790 .....	Feb. 2	8	+ 3.35	18.44	4. 3. 41	2	66. 48. 19.83	9.75	
		3	8.9	+ 3.34	18.02					
92	H. C. 7805 .....	2	8.9	+ 3.34	31.09	4. 4. 3	2	66. 51. 31.97	9.72	No. 91 and 92. These two stars are B. z. 395, 4 <sup>h</sup> . 2 <sup>m</sup> . 35 <sup>s</sup> and 4 <sup>h</sup> . 2 <sup>m</sup> . 56 <sup>s</sup> . It was ascertained by equatorial observations on April 2, 1860, that there are no stars in the places of H. C. 7802 and 7803, and that H. C. 7805 and 7806 are one star.
		3	9	+ 3.33	29.67					
93	B. (w.) iv. 86.....	Jan. 28	8.9	+ 0.47	59.65	4. 5. 19	1	75. 49. 0.65	9.62	
94	H. C. 7862.....	Feb. 3	9	+ 3.37	49.81	4. 5. 46	1	66. 47. 51.41	9.58	
95	B. (w.) iv. 103 .....	Jan. 28		+ 0.49	27.63	4. 6. 7	2	75. 49. 28.15	9.56	
		Dec. 18	9	+ 14.04	26.66					
96	B. (w.) iv. 105.....	Jan. 28	8	+ 0.51	51.99	4. 6. 11	1	75. 44. 52.99	9.56	
97	B. (w.) iv. 190 .....	28	9 $\frac{1}{4}$	+ 0.56	23.31	4. 10. 11	1	75. 48. 24.31	9.25	
98	$\phi$ Tauri.....	Feb. 3	5.6	+ 4.69	8.26	4. 11. 23	1	63. 0. 9.98	9.16	
99	55 Tauri.....	2	8	+ 1.08	57.79	4. 11. 34	2	73. 50. 1.07	9.14	
		Dec. 18	5.6	+ 13.98	62.03					
100	B. (w.) iv. 306 ....	18	8.9	+ 13.47	28.60	4. 15. 17	1	75. 40. 29.61	8.84	
101	H. C. 8267.....	Feb. 3	8 $\frac{3}{4}$	+ 3.56	5.50	4. 16. 33	1	66. 33. 7.11	8.75	No. 101. It was found by equatorial observations on April 2, 1860, that there is no star in the place of H. C. 8293, which is the same as H. C. 8267, supposing the observation in p. 575 of Hist. Cél. to have been taken at the second and third wires.
102	$\kappa^1$ Tauri .....	Jan. 28	5	+ 3.10	37.91	4. 16. 40	1	68. 2. 39.47	8.74	
103	B.A.C. 1373 .....	Dec. 18	6	+ 14.09	36.33	4. 19. 21	1	68. 42. 37.85	8.53	
104	H. C. 8468.....	Jan. 28	8	+ 3.49	22.19	4. 22. 27	1	66. 58. 23.78	8.28	
105	H. C. 8546.....	Dec. 18	7.8	+ 13.98	2.85	4. 24. 38	1	66. 2. 4.49	8.10	
106	H. C. 8599.....	Jan. 28	8.9	+ 1.78	32.72	4. 26. 15	1	72. 33. 33.98	7.97	
107	Aldebaran .....	Feb. 2	3	+ 1.35	16.87	4. 27. 33	2	73. 47. 18.46	7.88	No. 105. The N.P.D. of H. C. is 1' greater. See No. 54 in p. 48.
		3		+ 1.33	17.72					
	Aldebaran R .....	2		+ 1.35	18.39					
		3		+ 1.33	18.23		2	73. 47. 18.74		
108	H. C. 8693.....	Dec. 18	7	+ 13.87	21.48	4. 29. 28	1	63. 21. 23.19	7.71	No. 108 and 109. The observer represented these of equal magnitude by a figure.
109	H. C. 8694.....	18		+ 13.87	18.64	4. 29. 29	1	63. 21. 20.35	7.71	
110	H. C. 8705.....	Feb. 7	6.7	+ 2.65	44.95	4. 29. 39	1	69. 36. 46.41	7.70	
111	B. (w.) iv. 896 .....	7	8	+ 1.08	36.21	4. 41. 58	2	74. 43. 37.79	6.72	
		9	8.9	+ 1.05	37.21					
112	H. C. 9196.....	7	8.9	+ 3.28	19.19	4. 46. 32	1	66. 18. 20.81	6.32	
113	$\kappa$ Tauri.....	9	6	+ 4.27	44.79	4. 49. 13	1	65. 10. 46.45	6.10	
114	H. C. 9331.....	7	9	+ 3.86	29.64	4. 50. 42	1	66. 28. 31.26	5.98	
115	H. C. 9385.....	9	7.8	+ 4.84	56.87	4. 52. 41	1	63. 32. 58.57	5.81	
116	H. C. 9387.....	9	9	+ 4.83	11.21	4. 52. 44	1	63. 34. 12.91	5.81	
117	$\iota$ Tauri .....	Jan. 26	6	+ 3.15	21.54	4. 54. 22	1	68. 37. 23.06	5.67	
118	H. C. 9484 .....	Feb. 7	7	+ 5.15	44.19	4. 55. 30	1	62. 30. 45.91	5.57	
119	H. C. 9566.....	9	8	+ 4.96	18.23	4. 58. 0	1	63. 12. 19.94	5.36	
120	B. (w.) iv. 1361 ...	7	7	- 5.62	21.42					
		9		- 7.37	19.87	4. 59. 52	3	103. 19. 21.68	5.21	
		28	7	- 8.33	19.36					
121	H. C. 9704.....	Jan. 26	9 $\frac{1}{4}$	+ 5.19	38.97	5. 2. 6	1	61. 11. 40.70	5.01	
122	H. C. 9809.....	Feb. 9	8	+ 4.65	44.87	5. 6. 59	1	64. 12. 46.56	4.60	
123	H. C. 9827.....	Jan. 26	8	+ 5.13	40.97	5. 8. 1	1	61. 15. 42.70	4.51	
124	H. C. 9866.....	26	10	+ 5.14	43.90	5. 9. 27	1	61. 15. 45.63	4.38	
125	H. C. 9933.....	26	9	+ 5.10	41.11	5. 11. 31	1	61. 15. 42.84	4.21	
126	H. C. 10105 .....	26	8	+ 2.05	28.05	5. 16. 23	1	72. 56. 29.28	3.80	
127	$\beta$ Tauri.....	Feb. 9		+ 5.42	13.78	5. 17. 4	1	61. 31. 15.51	3.74	
	$\beta$ Tauri R .....	9		+ 5.42	14.55		1	61. 31. 15.55		
128	B.A.C. 1703.....	Dec. 20	7	+ 8.87	10.42	5. 19. 44	1	73. 41. 11.58	3.51	
129	H. C. 10252 .....	20	8	+ 8.82	51.94	5. 20. 24	1	73. 41. 53.10	3.45	
130	H. C. 10304 .....	Feb. 9	8.9	+ 5.24	46.64	5. 22. 13	1	62. 20. 48.37	3.30	
131	H. C. 10440 .....	Dec. 20	8	+ 8.79	20.35	5. 26. 6	1	62. 35. 22.07	2.95	
132	H. C. 10570 .....	20	8	+ 8.47	48.96	5. 29. 44	1	61. 37. 50.69	2.65	
133	H. C. 10720 .....	20	8	+ 7.74	45.89	5. 33. 16	1	73. 50. 47.04	2.33	
134	H. C. 10889 .....	20	8	+ 7.45	0.54	5. 38. 23	1	68. 11. 2.09	1.89	
135	H. C. 11320 .....	Mar. 2	9	- 3.12	15.42	5. 51. 30	1	70. 1. 16.85	0.74	
136	B. (w.) v. 1479 ....	Feb. 3	8	- 5.20	56.10					No. 136. This is H. C. 11551.
		9	7	- 5.91	57.31					
		18		- 6.78	58.25	5. 57. 33	5	104. 4. 58.46	- 0.22	
		Mar. 2	7.8	- 7.57	56.32					
		4		- 7.64	56.86					
137	B. (w.) v. 1487 ....	Feb. 3	8.9	- 5.18	38.70					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
137	B. (w.) v. 1487.....	Mar. 2	8.9	- 7.53	38,00	5. 57. 55	3	104. 1. 39,78	- 0,18	
		3	8.9	- 7.59	38,18					
138	B. (w.) v. 1500.....	Feb. 9	9	- 5.91	50,20					
		Mar. 3	9	- 7.60	48,97	5. 58. 14	3	104. 6. 50,69	- 0,16	
		4		- 7.64	48,44					
139	f <sup>1</sup> Orionis.....	2	5.6	+ 1.86	24,99	6. 3. 38	1	73. 50. 26,14	+ 0,32	
140	H. C. 11839.....	4	7	+ 2.49	23,13	6. 5. 57	1	72. 3. 24,42	0,53	
141	f <sup>2</sup> Orionis.....	Feb. 9	6	+ 1.60	58,23	6. 7. 0	1	73. 48. 59,39	0,61	
142	H. C. 11921.....	17	9	+ 3.63	3,05	6. 8. 4	1	67. 47. 4,62	0,70	
143	H. C. 11930.....	17	8	+ 3.62	35,47	6. 8. 32	1	67. 48. 37,04	0,74	
144	H. C. 11975.....	Mar. 2	8.9	+ 4.97	0,60	6. 9. 42	1	64. 36. 2,28	0,85	
145	10 Geminorum.....	4	8	+ 4.43	39,19	6. 10. 1	1	66. 20. 40,81	0,88	
146	H. C. 12013.....	Feb. 9	9	+ 4.82	34,45	6. 10. 55	1	62. 33. 36,17	0,96	
147	B. (w.) v. 1. 348....	3	9.10	- 4.77	20,01					
		6	9	- 5.17	18,57	6. 11. 57	3	104. 18. 20,72	1,05	
		7	9	- 5.29	19,09					
148	*.....	6	10	- 5.14	42,82					
		7	10	- 5.26	42,45	6. 12. 49	3	104. 16. 44,57	1,12	
		8		- 5.38	43,94					
149	H. C. 12111.....	Mar. 2	9	+ 5.83	52,64	6. 13. 36	1	61. 56. 54,37	1,20	
150	B. (w.) v. 1. 428....	Feb. 3	9.10	- 4.67	27,75					
		6	9	- 5.06	26,78					
		7	9½	- 5.20	27,02	6. 14. 36	4	104. 14. 28,94	1,28	
		8		- 5.32	28,21					
151	H. C. 12166.....	Mar. 4	9	+ 2.34	17,28	6. 14. 50	1	72. 32. 18,54	1,30	
152	H. C. 12170.....	Feb. 9	8.9	+ 2.21	40,90	6. 15. 2	1	72. 16. 42,18	1,31	
153	H. C. 12217.....	17	8	+ 4.04	55,02	6. 16. 24	1	66. 12. 56,65	1,43	
154	H. C. 12262.....	Mar. 2	7.8	+ 2.77	28,08	6. 17. 37	1	71. 9. 29,43	1,54	
155	*.....	Feb. 17	9½	+ 1.85	12,38	6. 19. 58	1	73. 41. 13,54	1,75	No. 155. The R.A. may not be exact to a second, being inferred from the observer's note.
156	H. C. 12356.....	17	8	+ 1.85	25,31	6. 20. 4	1	73. 40. 26,47	1,75	
157	H. C. 12411.....	7	9	+ 3.62	4,18	6. 21. 46	1	66. 22. 5,80	1,91	
158	H. C. 12454.....	8	8	+ 2.12	3,59					
		Mar. 4	7.8	+ 2.36	2,46	6. 22. 54	2	72. 29. 4,29	2,00	
159	H. C. 12462.....	2	7	+ 3.89	55,56	6. 23. 12	1	67. 42. 57,13	2,02	
160	H. C. 12573.....	Feb. 7	8.9	+ 4.71	30,99	6. 26. 27	2	61. 37. 32,04	2,31	
		Mar. 4	8.9	+ 5.94	29,63					
161	H. C. 12586.....	Feb. 17	9	+ 3.31	34,52	6. 26. 43	1	68. 27. 36,05	2,33	
162	H. C. 12597.....	6	8.9	+ 2.91	51,52	6. 26. 54	1	68. 59. 53,02	2,34	
163	H. C. 12599.....	Mar. 2	8½	+ 2.85	7,29	6. 27. 1	1	70. 53. 8,66	2,36	
164	H. C. 12712.....	2	7	+ 3.82	42,08	6. 30. 18	2	67. 50. 43,23	2,65	
		4	6.7	+ 3.86	41,24					
165	H. C. 12716.....	Feb. 17	7	+ 4.17	45,80	6. 30. 34	1	65. 16. 47,46	2,66	No. 165. See the note to No. 106 in p. 49.
166	51 (Hev.) Cephei sp.	Sept. 1		- 11.47	45,56					
		2		- 11.60	47,59					
		4		- 11.86	48,77	6. 30. 36	6	2. 44. 48,29	2,68	
		5		- 11.99	50,33					
		9		- 12.49	47,99					
		11		- 12.67	51,96					
	51 (H.) Cephei sp. R.	1		- 11.47	48,25					
		2		- 11.60	49,76					
		4		- 11.86	50,02		6	2. 44. 49,82		
		5		- 11.99	49,59					
		9		- 12.49	51,59					
		11		- 12.67	47,87					
167	H. C. 12724.....	Mar. 2		+ 3.82	20,08	6. 30. 44	2	67. 52. 21,22	2,68	
		4	9½	+ 3.87	19,24					
168	B. (w.) v. 1. 990....	Feb. 6	6	- 4.48	3,69					No. 168. H. C. 12825.
		7	5.6	- 4.61	4,95	6. 32. 36	4	104. 1. 6,29	2,85	
		9		- 4.87	5,42					
		25		- 6.56	5,13					
169	H. C. 12914.....	Mar. 2	8	+ 3.35	51,85	6. 35. 48	1	69. 9. 53,34	3,12	
170	H. C. 12946.....	Feb. 7	8.9	+ 3.48	30,79	6. 36. 30	1	66. 12. 32,42	3,18	
171	ξ Geminorum.....	Mar. 10		+ 0.94	3,42	6. 37. 6	1	76. 57. 4,35	3,24	
	ξ Geminorum R...	10		+ 0.94	5,13		1	76. 57. 5,32		
172	H. C. 12962.....	Feb. 6	8	+ 3.37	58,28	6. 37. 18	1	66. 28. 59,90	3,25	
173	H. C. 12983.....	Mar. 2	9	+ 3.37	46,13	6. 37. 45	1	69. 8. 47,62	3,30	
174	H. C. 13004.....	3	8.9	+ 5.13	3,43	6. 38. 24	1	63. 43. 5,13	3,34	
175	H. C. 13015.....	4	9	+ 1.97	3,72	6. 38. 39	1	73. 36. 4,89	3,37	
176	H. C. 13077.....	Feb. 28	7	- 6.73	18,03	6. 39. 54	1	104. 22. 19,54	+ 3,47	No. 176. H. C. 13078 is the same star.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	<i>h. m. s.</i>		<i>° ' "</i>	"	
177	B.A.C. 2221.....	Feb. 7	6.7	-4.43	20.45					
	—————	17		-5.67	22.44	6.40.12	3	104.16.22,76	+3,50	
	—————	25	6	-6.46	20.89					
178	*.....	6	9 $\frac{1}{4}$	-4.22	3.20	6.42.8	1	104.12.4,70	3,67	No. 178. The R.A. was inferred from that of the next star, in accordance with the observer's note.
179	B. (w.) VI. 1286....	6	9	-4.22	43.68					
	—————	7	9	-4.36	44.98	6.42.12	3	104.13.45,61	3,67	
	—————	25	9	-6.40	43.68					
180	H. C. 13180.....	Mar. 4	9 $\frac{1}{4}$	+2.17	17.84	6.43.8	1	72.54.19,07	3,76	
181	H. C. 13178.....	2	9 $\frac{1}{4}$	+3.21	46.27	6.43.11	1	69.29.47,74	3,76	
182	*.....	2	9.10	-6.66	46.57					No. 182. The N.P.D. of Mar. 17 is the mean from the bisections with the wire and bar.
	—————	3	10	-6.73	48.05	6.47.39	3	104.3.48,89	4,14	No. 183. H. C. 13392.
	—————	17		-7.43	47.58					
183	B. (w) VI. 1474....	Feb. 7	9 $\frac{1}{4}$	-4.14	23.67					
	—————	Mar. 4	9	-6.77	24.22	6.48.6	2	103.58.25,44	4,18	
184	$\mu$ Canis Majoris....	Feb. 28		-6.43	27.27					
	—————	Mar. 3		-6.67	27.96	6.49.25	3	103.51.29,56	4,30	
	—————	4		-6.72	29.02					
185	*.....	2	9	+5.09	39.68	6.54.16	1	63.5.41,40	4,71	No. 185. The R.A. of H. C. 13564, for which this star was taken, is erroneous. See note to No. 120 in p. 49.
186	B. (w.) VI. 1757...	Feb. 7	9 $\frac{1}{4}$	-3.89	33.32					
	—————	28		-6.32	30.28	6.56.23	3	103.57.32,58	4,88	
	—————	Mar. 3	10	-6.56	29.66					
187	*.....	Feb. 28	9	-6.25	38.76	6.57.54	1	103.43.40,24	5,01	No. 187. The R.A. is only approximate, depending on the observer's note.
188	B. (w.) VI. 1827...	6	8	-3.66	2.59					
	—————	28	8.9	-6.23	4.71	6.58.19	3	103.45.4,93	5,05	
	—————	Mar. 2	8.9	-6.41	3.04					
189	H. C. 13848.....	Feb. 6	9	-3.61	38.47					
	—————	7	8.9	-3.76	37.37	7.0.42	3	103.49.39,15	5,25	
	—————	Mar. 3	9	-6.45	37.16					
190	B. (w.) VII. 22.....	Feb. 6	9.10	-3.55	37.00					
	—————	28	9	-6.18	37.90	7.1.54	3	103.45.38,94	5,35	
	—————	Mar. 2	9	-6.35	37.47					
191	51 Geminorum.....	Feb. 7	5	+1.56	50.39					
	—————	Mar. 10		+1.95	51.20	7.4.59	2	73.35.51,97	5,61	
	51 Geminorum R..	10		+1.95	50.58		1	73.35.51,01		
192	H. C. 14022.....	2	8	+1.91	49.85	7.6.9	1	73.8.51,06	5,71	
193	H. C. 14030.....	3	8.9	+4.12	40.64	7.6.38	1	65.53.42,28	5,75	
194	H. C. 14072.....	3	8	+4.10	42.11	7.7.45	1	65.51.43,75	5,85	
195	H. C. 14086.....	13	8	+5.37	53.99	7.8.15	1	63.22.55,70	5,89	
196	*.....	Feb. 2		-2.71	54.03					No. 196. Compared with Comet II. 1853 by Mr Maclear, who considers it to be of Mag. 8. See Monthly Notices of the R. Ast. Soc. Vol. XIV. p. 8.
	—————	6	9	-3.34	54.32					
	—————	7	9.10	-3.48	54.53	7.8.41	4	103.32.55,33	5,92	
	—————	8	9	-3.63	52.55					
197	H. C. 14110.....	Mar. 13	8.9	+5.33	36.29	7.8.54	1	63.24.38,00	5,93	
198	*.....	Feb. 28	8	-5.96	28.34					
	—————	Mar. 2	8	-6.14	27.65	7.10.3	3	103.25.30,07	6,03	
	—————	17		-7.05	29.83					
199	H. C. 14228.....	Feb. 23		-5.48	47.42					
	—————	Mar. 4		-6.32	47.28	7.11.15	2	103.37.48,82	6,14	
200	*.....	4	9 $\frac{1}{4}$	-6.27	24.30	7.11.19	1	103.26.25,76	6,13	No. 200 and 201. The preceding star is No. 21 in Vol. XIV. p. 8 of the Monthly Notices of the R. Ast. Soc., the place of which is more accurately determined by Mr Maclear in Vol. XV. p. 74. The other star was observed with the Transit on March 4 and 15, 1854. On April 3, 1860, the difference of their R.A. was found by micrometer measures to be 0.48; the mean R.A. Jan. 1, 1854, of the preceding star is consequently 7h. 11m. 19s.50. The two stars were at the same time judged to be of Mag. 9.10.
201	*.....	4	9	-6.27	59.99	7.11.20	1	103.26.1,45	6,13	
202	B. (w.) VII. 399....	Feb. 8	9	-3.51	18.60	7.13.6	1	103.30.20,07	6,29	
203	*.....	28	10	-5.86	28.05					
	—————	Mar. 2	10	-6.04	28.31	7.14.27	3	103.21.29,30	6,40	
	—————	15		-6.91	27.15					
204	B. (w.) VII. 451....	Feb. 2	8	-2.49	38.29					
	—————	Mar. 3	10.11	-6.09	37.37	7.14.51	3	103.11.38,84	6,43	
	—————	13	10.11	-6.75	36.51					
205	*.....	Feb. 8	8 $\frac{3}{4}$	-3.35	19.17					
	—————	23		-5.27	17.36	7.16.39	3	103.4.19,27	6,58	
	—————	Mar. 17	10	-6.89	16.97					
206	*.....	Feb. 2	8	-2.30	60.02					No. 202. Respecting the star noted by the observer as not seen when this was taken, see the preceding Note, and No. 196 of the R.A. Catalogue.
	—————	28	8	-5.67	58.51	7.19.50	3	102.54.0,98	6,85	No. 205. The N.P.D. of Mar. 17 is the mean from two bisections.
	—————	Mar. 3	7.8	-5.94	60.09					
207	*.....	Feb. 23		-5.34	38.45					
	—————	Mar. 2	9	-5.77	38.99	7.21.39	3	102.39.40,19	7,00	
	—————	4	9	-5.93	38.84					
208	*.....	Feb. 8	8 $\frac{3}{4}$	-3.17	27.53					No. 208. The Mag. is 10 in the list contained in Vol. XIV. p. 8, of the Monthly Notices of the R. Ast. Soc.
	—————	28	7	-5.61	27.24	7.22.33	3	102.50.28,90	+7,06	
	—————	Mar. 3	7.8	-5.89	27.64					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		"	"	
209	*.....	Mar. 2	10.11	-5.70	48.28					
		4	10.11	-5.87	49.04	7.23.54	3	102.27.49.79	+7.17	
		13		-6.48	47.80					
210	B (w.) VII. 757....	Feb. 2	10	-2.11	25.23	7.24.25	1	102.28.26.65	7.23	
211	B. (w.) VII. 770....	2	9	-2.11	17.92	7.24.45	1	102.28.19.34	7.25	
212	Castor <i>nf.</i> .....	Mar. 17		+7.13	44.46	7.25.17	2	57.47.45.81	7.30	
		29		+7.78	43.67					
	Castor <i>nf.</i> R.....	17		+7.13	45.98		2	57.47.47.42		
		29		+7.78	46.83					
213	Castor <i>sp.</i> .....	29		+7.78	45.54	7.25.17	1	57.47.47.28	7.30	
	Castor <i>sp.</i> R.....	29		+7.78	49.85		1	57.47.50.86		
214	*.....	2	9	+2.03	21.15	7.34.3	1	71.38.22.53	8.00	No. 214. The R.A. is from a Transit observation in 1852. The star was observed for H. C. 14969, the R.A. of which is 40' too small. See No. 165 and 166 in p. 50 of this Vol.
215	H. C. 15029.....	4	9½	+3.76	33.04	7.36.18	1	65.31.34.69	8.18	
216	Pollux.....	13		+5.42	30.56					No. 216. The reflection observation of Mar. 13 is considered too discordant.
		15		+5.54	30.05	7.36.23	4	61.37.31.51	8.18	
		17		+5.66	29.47					
		29		+6.38	29.04					
	Pollux R.....	13		+5.42	(26.69)					
		15		+5.54	30.97		3	61.37.32.19		
		17		+5.66	30.95					
		29		+6.38	31.64					
217	H. C. 15528.....	27	8	+3.78	20.38	7.50.19	1	68.27.21.91	9.29	
218	B. (w.) VII. 1763...	27	9	+1.39	54.14	7.59.52	1	75.13.55.18	10.01	
219	B.A.C. 2737.....	27	6.7	+1.46	32.01	8.2.46	1	74.56.33.68	10.24	
220	H. C. 16327.....	6	9	+1.46	46.59	8.12.51	1	71.41.47.91	10.98	
221	B.A.C. 2810.....	6	7	+1.22	39.40	8.16.27	1	72.20.40.67	11.25	
222	γ Cancri.....	6		+1.81	32.93	8.34.50	1	68.0.34.49	12.54	
	γ Cancri R.....	6		+1.81	33.20		1	68.0.34.03		
223	B.A.C. 2977.....	6		-0.33	3.15	8.40.38	1	76.55.4.08	12.93	
224	B. (w.) VIII. 1057..	6		-0.32	4.27	8.40.44	1	76.52.5.20	12.93	
225	ι Ursæ Majoris....	6		+7.30	17.88	8.49.11	1	41.23.19.00	13.49	
	ι Ursæ Majoris R..	6		+7.30	18.25		1	41.23.18.63		
226	B. (w.) IX. 234....	Feb. 9		-0.84	41.49	9.11.49	1	76.39.42.43	14.89	
227	*.....	Mar. 27	9.10	-0.05	8.05	9.12.13	1	75.44.9.05	14.91	
228	B. (w.) IX. 263....	Apr. 12	9	+0.19	29.70	9.13.1	1	77.25.30.60	14.96	
229	B.A.C. 3209.....	12	7	+1.60	13.78	9.17.27	1	72.47.15.02	15.22	
230	H. C. 18680.....	12	9	+1.04	59.93	9.22.35	1	74.6.1.06	15.51	
231	B. (w.) IX. 564....	12	8.9	-0.56	32.22	9.25.50	1	78.53.33.04	15.69	No. 230. The N.P.D. of H. C. is 5' greater. The star is B. z. 273, 9h. 20m. 54s, the N.P.D. of which agrees with that of the Camb. observation, which was also confirmed by an equatorial comparison with H. C. 18704 on April 2, 1860.
232	B. (w.) IX. 628....	Mar. 31	9	-1.09	57.55	9.28.30	1	78.46.58.38	15.83	
233	B. (w.) IX. 692....	Apr. 12	8	-1.28	6.94	9.31.22	1	80.52.7.69	15.98	
234	H. C. 18995.....	Mar. 24	9	+0.37	5.79	9.33.0	1	71.24.7.13	16.07	
235	B. (w.) IX. 749....	31	9	-0.42	23.65	9.34.16	1	75.48.24.65	16.14	
236	ψ Leonis.....	Apr. 12	7	+0.36	44.18	9.25.47	1	75.18.45.22	16.22	
237	ε Leonis.....	19		+3.98	18.68	9.37.34	1	65.33.20.33	16.30	
	ε Leonis R.....	19		+3.98	22.16		1	65.33.23.08		
238	18 Leonis.....	Mar. 30	6	-1.03	9.70		2	77.31.10.81	16.35	
		31	6	-1.00	10.13	9.38.31				
239	B. (w.) IX. 846....	30	9	-1.06	32.21	9.38.55	2	77.30.30.96	16.38	
		31	9.10	-1.00	31.92					
240	B. (w.) IX. 941....	30	7.8	-2.08	33.23	9.43.11	1	81.11.33.97	16.58	
241	B. (w.) IX. 955....	24	8	-1.88	7.78	9.43.59	2	79.30.8.25	16.63	
		Apr. 12	7.8	-1.13	7.12					
242	B. (w.) IX. 963....	Mar. 30	9	-2.12	5.10	9.44.28	1	81.12.5.84	16.65	
243	H. C. 19438.....	Apr. 6	8.9	-0.13	58.93	9.48.32	1	74.34.0.02	16.84	
244	B.A.C. 3398.....	Mar. 24	6.7	-2.19	36.50	9.48.41	1	80.22.37.27	16.85	
245	H. C. 19442.....	Apr. 6	8	-0.13	46.27	9.48.41	1	74.34.47.36	16.85	
246	26 Leonis.....	Mar. 31	8	-0.40	2.85	9.50.15	1	74.5.3.98	16.93	
247	ν Leonis.....	30	5.6	-1.17	36.34		2	76.51.37.99	16.93	
		Apr. 12	6	-0.47	37.78	9.50.22				
248	B. (w.) IX. 1118...	Mar. 24	7.8	-3.04	52.50	9.52.5	1	84.4.53.19	17.01	
249	B. (w.) IX. 1162...	30	10	-0.83	47.55		2	75.0.48.83	17.11	
		31	10.11	-0.77	47.98	9.54.19				
250	B. (w.) IX. 1172...	30	8	-0.83	27.68	9.54.42	1	74.57.28.74	17.13	
251	B.A.C. 3430.....	Apr. 12	8	-1.84	0.54	9.55.33	1	81.4.1.29	17.17	
252	A Leonis.....	Mar. 30	3	-2.03	18.60		2	79.17.18.45	17.37	
		31	6	-1.97	16.67	10.0.9				
253	Regulus.....	23		-1.88	14.16		3	77.19.15.51	+17.40	
		24		-1.84	13.91	10.0.36				
		May 5		+0.52	15.77					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
253	Regulus R.....	Mar. 23		- 1.88	16.65					
		24		- 1.84	16.10		2	77.19.16.55		
254	B. (w.) x. 38 .....	31	8	- 2.97	55.33	10. 3. 32	1	83. 6. 56.03	+ 17.52	
255	B. (w.) x. 81 .....	30	7.8	- 2.37	34.29	10. 5. 46	1	80. 5. 35.07	17.62	
256	* .....	23	8.9	- 2.38	0.73					
		27		- 2.21	0.09	10.12.12	2	78. 8. 1.27	17.88	
257	H. C. 20080.....	30	8	- 2.15	18.08	10.13.44	1	78.11.18.94	17.94	
258	B. (w.) x. 263.....	Apr. 10		- 3.07	56.58					
		11	7.8	- 3.04	57.81	10.15.40	2	83.33.57.27	18.01	
259	B. (w.) x. 299.....	Mar. 23	8.9	- 3.60	1.29					
		27	8.9	- 3.56	1.06	10.17.45	2	84. 5. 1.98	18.09	
260	B. (w.) x. 396.....	Apr. 10	9	- 2.66	24.34	10.22.28	1	81.21.25.08	18.27	
261	B. (w.) x. 399.....	Mar. 23	8	- 2.60	21.61	10.22.37	1	77.37.22.50	18.27	
262	$\rho$ Leonis .....	27		- 2.94	34.67					
		May 4		- 0.99	36.82	10.25. 7	2	79.56.36.53	18.36	
	$\rho$ Leonis R.....	Mar. 27		- 2.94	36.94		1	79.56.36.99		
263	B. (w.) x. 446.....	Apr. 11	8.9	- 2.90	51.06	10.25.45	1	82. 9. 51.78	18.39	
264	B. (w.) x. 475.....	10	8	- 1.30	56.94	10.27.10	1	75.37.57.95	18.43	
265	* .....	1	9.10	- 2.37	58.45	10.28.22	1	77.36.59.34	18.47	
266	B. (w.) x. 499.....	1	7.8	- 2.37	52.43	10.28.23	1	77.37.53.32	18.47	
267	B. (w.) x. 512.....	11	8 $\frac{1}{4}$	- 1.18	51.54	10.28.59	1	75.11.52.58	18.49	
268	B. (w.) x. 553.....	10	7.8	- 1.31	18.46	10.30.57	1	75.13.19.50	18.56	
269	B. (w.) x. 576.....	Mar. 27	9.10	- 4.34	2.98	10.32.23	1	86.44. 3.67	18.61	
270	B. (w.) x. 580.....	Apr. 11	9	- 2.37	58.32	10.32.31	1	79.24.59.12	18.61	
271	34 Sextantis.....	10	7	- 4.02	15.51	10.35. 5	1	85.39.16.19	18.70	
272	35 Sextantis <i>sp.</i> ...	11	8	- 5.35	14.41	10.35.45	1	84.29.15.10	18.72	
273	35 Sextantis <i>nf.</i> ...	11	6 $\frac{1}{2}$	- 5.35	10.70	10.35.46	1	84.29.11.39	18.72	
274	B. (w.) x. 720.....	10	9	- 4.44	15.89					
		11	8 $\frac{1}{4}$	- 4.42	17.51	10.40.38	2	86.56.17.39	18.87	
275	B. (w.) x. 798.....	11	8	- 3.85	15.75	10.44. 4	1	84.13.16.44	18.96	
276	56 Leonis .....	11	6	- 3.67	8.81	10.48.27	1	83. 2. 9.51	19.09	
277	B. (w.) x. 923.....	10		- 4.78	15.05	10.51.17	1	87.29.15.74	19.16	
278	B. (w.) x. 945.....	11	9.10	- 3.80	10.04	10.52.28	1	83. 7. 10.74	19.19	
279	$\epsilon$ Leonis .....	11	5.6	- 3.81	51.45	10.53.11	1	83. 6. 52.15	19.21	
280	H. C. 21140.....	15	8.9	- 3.78	9.14	10.53.36	1	83.32. 9.83	19.22	
281	$\alpha$ Ursæ Majoris....	May 4		+ 13.66	42.79					
		5		+ 13.80	42.14	10.54.41	2	27.27.42.40	19.25	
	$\alpha$ Ursæ Majoris R..	4		+ 13.66	41.54		1	27.27.40.73		
282	B. (w.) x. 993.....	Apr. 8	8	- 4.98	5.14					
		13	8.9	- 4.92	8.17	10.55.16	2	87.58. 7.36	19.26	
283	B. (w.) x. 1023.....	11	8	- 3.98	12.15	10.56.49	1	83.25.12.85	19.30	
284	$\chi$ Leonis .....	May 2		- 2.50	32.31	10.57.29	1	81.52.33.03	19.31	
285	B. (w.) x. 1063.....	Apr. 10	8	- 3.15	6.33	10.59. 0	1	79.15. 7.14	19.35	
286	B. (w.) x. 1075....	13	7.8	- 2.94	53.57	10.59.35	1	78.59.54.39	19.36	
287	B. (w.) x. 1078....	15	9	- 3.49	41.61	10.59.47	1	81.41.42.34	19.37	
288	B. (w.) x. 1102....	11	7.8	- 4.64	15.07	11. 0.56	1	85.59.15.75	19.39	
289	B. (w.) xi. 23.....	8	7	- 3.83	59.24	11. 2.56	1	81.18.59.98	19.44	
290	B. (w.) xi. 52.....	13	10	- 5.23	26.23					
		15	10	- 5.20	26.55	11. 4.27	2	88.34.27.10	19.47	
291	$\theta$ Leonis .....	Mar. 31		- 2.97	22.16					
		Apr. 10		- 2.19	22.60	11. 6.35	2	73.46.23.54	19.51	
	$\theta$ Leonis R.....	Mar. 31		- 2.97	23.52					
		Apr. 10		- 2.19	23.27		2	73.46.23.82		
292	B. (w.) xi. 142.....	15	10	- 5.67	28.45	11. 9.17	1	90.16.29.19	19.57	
293	B. (w.) xi. 149.....	13	10	- 4.04	2.02	11. 9.37	1	82.32. 2.73	19.57	
294	$\delta$ Crateris.....	May 4		- 8.91	20.00	11.12. 3	1	103.59.21.49	19.62	
295	H. C. 21626.....	Apr. 24	7.8	- 4.70	37.22	11.13.26	1	86.46.37.91	19.64	
296	B. (w.) xi. 299....	24	8.9	- 3.10	28.25	11.17.56	1	80.16.29.02	19.72	
297	B. (w.) xi. 314....	13	8.9	- 3.86	17.56	11.18.29	1	80.33.18.32	19.73	
298	B.A.C. 3892.....	13		- 3.86	13.01	11.18.45	1	80.32.13.77	19.73	
299	B. (w.) xi. 347....	10	8	- 5.44	21.65	11.20.25	1	87.43.22.35	19.76	
300	B. (w.) xi. 369.....	24	7	- 5.17	30.84	11.21.18	1	87.59.31.54	19.77	
301	B. (w.) xi. 445.....	10	9	- 4.78	52.39	11.25.59	1	83.19.53.09	19.83	
302	B. (w.) xi. 592.....	13		- 5.78	15.78					
		15	8	- 5.73	18.33	11.33.59	2	88.14.17.76	19.93	
303	B. (w.) xi. 597.....	13		- 5.78	42.94	11.34.13	1	88.11.43.64	19.93	
304	B. (w.) xi. 657.....	Mar. 28		- 5.94	42.91	11.37.38	1	88.16.43.61	+ 19.96	
305	$\beta$ Leonis .....	May 5		- 1.39	40.97					
		9		- 1.03	39.53					

No. 256. On April 2, 1860, the R.A. of this star was obtained by equatorial comparisons with H. C. 20080 and H. C. 20100, the latter of which is B. (w.) x. 240. No star was found in the place of H. C. 20061. On the next night stars were found to be in the places of H. C. 20047 and H. C. 20054, which are deduced hypothetically from La'ande.

No. 257. H. C. 20061 has the same N.P.D., and is most probably the same star with an erroneous R.A.

Nos. 265 and 266. The R.A. of the preceding star was obtained April 2, 1860, by comparison with the next, the place of which was verified by comparison with B. (w.) x. 492. At the same time no star was found in the place of H. C. 20497, which has the same R.A. as B. (w.) x. 499, and less N.P.D. by 5'.

No. 268. The N.P.D. does not well agree with that obtained on March 29, 1853. See No. 447 in p. 216.

No. 295. This is B. (w.) xi. 206, the R.A. of which is 1<sup>st</sup> too small. See No. 396 in p. 217 of Vol. XVIII.

No. 297. H. C. 21755 has the same R.A., but greater N.P.D. by 5'. On April 2, 1860, no star was found in the H. C. place.

No. 298. The N.P.D. of B.A.C. is 7" greater.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
305	$\beta$ Leonis .....	May 13		- 0,67	39,38	11.41.37	5	74.36.41,09	+ 19,99	
	—	15		- 0,49	41,09					
	—	16		- 0,40	39,02					
	$\beta$ Leonis R. ....	5		- 1,39	42,72					
	—	15		- 0,49	43,29		2	74.36.43,86		
306	$\alpha$ Virginis .....	2		- 3,72	20,42					
	—	5		- 3,49	18,63	11.57.46	4	80.27.20,42	20,05	
	—	15		- 2,70	18,86					
	—	16		- 2,62	20,69					
307	B. (w.) XII. 44 ....	Mar. 16	8 $\frac{1}{4}$	- 5,99	21,80	12. 3. 52	1	95. 6. 32,75	20,05	
308	H. C. 22945 .....	April 19	8	- 6,75	49,41	12. 7. 5	1	90.30.50,15	20,04	
309	$\delta$ Ursæ Majoris ....	May 5		+ 8,35	19,41					
	—	13		+ 9,88	21,67	12. 8. 11	4	32. 9. 21,08	20,04	
	—	16		+ 10,40	21,33					
	—	23		+ 11,48	20,99					
	$\delta$ Ursæ Majoris R..	5		+ 8,35	20,22					
	—	13		+ 9,88	20,50		4	32. 9. 19,93		
	—	16		+ 10,40	21,00					
	—	23		+ 11,48	20,02					
310	* .....	Mar. 16	9 $\frac{1}{4}$	- 6,05	19,26	12.11.10	1	95.50.20,26	20,03	No. 310. By equatorial comparisons on Apr. 3, 1860, this star was found to precede the next by 5".0. The latter was judged at the same time to be a little brighter than the other. Nos. 314 and 315. The magnitudes were considered to be exactly equal.
311	B. (w.) XII. 168 ....	16	9 $\frac{1}{4}$	- 6,05	50,14	12.11.15	1	95.51.51,14	20,03	
312	B. (w.) XII. 181 ....	April 19	9.10	- 7,53	20,51	12.11.55	1	94.56.21,44	20,03	
313	H. C. 23179 .....	19	10	- 7,56	30,08	12.15.32	1	94.46.31,01	20,01	
314	B. (w.) XII. 278 ....	Mar. 16	9	- 6,21	42,63	12.17.46	1	94.21.43,53	19,99	
315	B. (w.) XII. 280 ....	16	9	- 6,21	6,26	12.17.51	1	94.24. 7,16	19,99	
316	$\gamma$ Comæ .....	April 15		- 2,46	5,98	12.19.39	2	60.55. 8,99	19,98	
	—	May 15		+ 2,27	8,54					
	$\gamma$ Comæ R. ....	April 15		- 2,46	13,14		1	60.55.14,15		
317	B. (w.) XII. 361 ....	19	9	- 7,43	2,23	12.21.40	1	93.18. 3,08	19,97	
318	B. (w.) XII. 445 ....	Mar. 16	9	- 6,57	27,87	12.26.42	2	91. 2. 28,06	19,92	
	—	April 19	9	- 7,21	26,74					
319	$\beta$ Canum Venat. ...	15		- 0,63	50,34	12.26.48	2	47.50.52,56	19,92	
	—	May 23		+ 6,70	51,75					
	$\beta$ Canum Venat. R..	April 15		- 0,63	55,10		2	47.50.55,43		
	—	May 23		+ 6,70	54,19					
320	$\kappa$ Draconis .....	15		+ 11,45	22,44	12.27.43	3	19.24.23,09	19,91	
	—	16		+ 11,65	22,96					
	—	18		+ 12,00	24,92					
	$\kappa$ Draconis R. ....	16		+ 11,65	20,91		2	19.24.20,02		
	—	18		+ 12,00	21,31					
321	$\chi$ Virginis .....	Mar. 16	6	- 6,18	27,24	12.31.43	2	97.11.27,69	19,86	
	—	April 19	4	- 8,07	25,94					
322	B.A.C. 4259 .....	Mar. 16	9 $\frac{1}{4}$	- 6,17	34,38	12.31.51	1	97.13.35,48	19,86	No. 322. The Mag. is 10 by Piazzi, 9 by Bessel (w. XII. 528), 6 by Taylor (Madras Cat. No. 6720).
323	$\epsilon$ Ursæ Majoris ....	May 5		+ 5,23	47,69	12.47.36	1	33.14.47,99	19,62	
324	78 Ursæ Majoris ...	10		+ 5,96	44,52	12.54.27	2	32.50.44,95	19,49	
	—	15		+ 7,07	44,82					
	78 Ursæ Majoris R.	10		+ 5,96	46,08		2	32.50.44,57		
	—	15		+ 7,07	43,95					
325	$\epsilon$ Virginis .....	April 6		- 7,28	15,73	12.54.55	2	78.15.17,22	19,48	
	—	May 2		- 5,01	16,98					
	$\epsilon$ Virginis R. ....	April 6		- 7,28	11,46		1	78.15.11,58		
326	Spica .....	May 2		- 9,00	51,40					
	—	3		- 9,01	51,03					
	—	9		- 9,07	49,42					
	—	30		- 8,91	49,55	13.17.30	7	100.23.51,48	18,92	
	—	31		- 8,89	48,77					
	—	June 17		- 8,31	50,55					
	—	29		- 7,83	50,39					
327	$\zeta$ Ursæ Majoris ....	May 19		+ 5,99	39,32	13.18. 2	1	34.18.39,73	18,90	
	$\zeta$ Ursæ Majoris R..	19		+ 5,99	39,69		1	34.18.39,37		
328	$\zeta$ Virginis .....	5		- 7,62	50,84					
	—	10		- 7,36	50,05	13.27.16	3	89.50.50,97	18,62	
	—	15		- 7,08	49,84					
	$\zeta$ Virginis R. ....	April 18		- 8,26	53,07		1	89.50.53,06		
329	$\eta$ Ursæ Majoris ....	May 3		- 0,67	20,82					No. 329. The observation of May 4 is considered too discordant.
	—	4		- 0,42	(16,41)	13.41.47	2	39.57.22,25	+ 18,11	
	—	June 17		+ 8,61	21,70					
	$\eta$ Ursæ Majoris R..	May 3		- 0,67	25,22		1	39.57.25,47		
330	$\nu$ Bootis .....	April 18		- 7,77	30,96					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
330	$\nu$ Bootis .....	May 9		- 5.02	31.93	13.42.26	3	73.28.33.09	+ 18.08	
		16		- 4.05	32.84					
	$\nu$ Bootis R .....	April 18		- 7.77	33.92					
		May 9		- 5.02	33.63		2	73.28.34.22		
331	$i$ Draconis .....	30		+ 7.98	14.73	13.47.10	2	24.33.14.49	17.90	
		31		+ 8.21	14.64					
	$i$ Draconis R .....	30		+ 7.98	15.95		2	24.33.14.28		
		31		+ 8.21	14.48					
332	$\eta$ Bootis .....	April 18		- 7.89	5.19	13.47.44	2	70.52.6.40	17.88	
		May 19		- 3.45	4.86					
	$\eta$ Bootis R .....	April 18		- 7.89	7.31		1	70.52.7.94		
333	$\alpha$ Draconis .....	June 19		+ 10.65	32.05	14.0.26	1	24.55.31.87	17.35	
	$\alpha$ Draconis R .....	19		+ 10.65	30.60		1	24.55.29.68		
334	Arcturus .....	April 10		- 10.40	17.30					
		May 2		- 7.43	19.61					
		3		- 7.27	18.83					
		8		- 6.47	18.68					
		9		- 6.31	17.17					
		11		- 5.99	17.45	14.9.0	12	70.3.19.41	16.96	
		13		- 5.67	17.24					
		15		- 5.35	16.44					
		16		- 5.19	18.28					
		19		- 4.71	17.07					
		31		- 2.89	18.12					
		June 17		- 0.75	19.56					
	Arcturus R .....	April 10		- 10.40	20.77					
		May 11		- 5.99	19.36					
		13		- 5.67	18.55					
		15		- 5.35	19.75		8	70.3.19.86		
		16		- 5.19	18.59					
		19		- 4.71	19.47					
		31		- 2.89	19.48					
		June 17		- 0.75	17.41					
335	B. (w.) xiv. 335 ...	April 10		- 8.38	24.29	14.19.0	1	102.14.25.70	16.48	
336	$\gamma$ Bootis .....	May 4		- 5.17	2.04					
		5		- 4.94	2.69					
		11		- 3.49	1.67					
		16		- 2.30	2.41	14.26.12	8	51.3.3.77	16.11	
		18		- 1.82	5.00					
		25		- 0.20	1.53					
		June 14		+ 3.87	1.76					
		19		+ 4.72	2.88					
	$\gamma$ Bootis R .....	May 4		- 5.17	2.44					
		5		- 4.94	1.71					
		18		- 1.82	2.11		6	51.3.3.79		
		25		- 0.20	3.12					
		June 14		+ 3.87	4.25					
		19		+ 4.72	3.74					
337	$\zeta$ Ursæ Minoris .....	May 9		+ 0.49	17.28	14.27.53	1	13.39.16.91	16.03	
	$\zeta$ Ursæ Minoris R .....	9		+ 0.49	16.53		1	13.39.15.43		
338	$\epsilon$ Bootis .....	2		- 7.47	28.16					
		3		- 7.26	25.68					
		4		- 7.05	26.50	14.38.37	6	62.18.28.84	15.44	
		18		- 4.18	29.44					
		26		- 2.63	26.80					
		June 19		+ 1.65	26.05					
	$\epsilon$ Bootis R .....	May 2		- 7.47	27.86					
		26		- 2.63	26.77		2	62.18.28.31		
339	109 Virginis .....	11		- 8.16	19.06					
		19		- 7.50	19.87	14.38.52	3	87.29.20.30	15.43	
		June 14		- 5.25	19.91					
340	B. (w.) xiv. 768 ...	May 25		- 8.92	58.52	14.41.18	1	100.12.59.83	15.29	
341	8 Libræ .....	4		- 9.21	11.66					
		13		- 9.43	12.21	14.42.37	2	105.23.13.48	15.21	
342	$\alpha^2$ Libræ .....	4		- 9.17	54.79					
		8		- 9.29	54.17	14.42.48	3	105.25.56.47	15.20	
		13		- 9.42	55.82					
	B.A.C 4896 .....	31		- 9.91	46.55	14.43.25	1	107.10.48.15	+ 15.16	
343	$\beta$ Ursæ Minoris ...	3		- 3.76	49.82					



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
344	$\beta$ Ursæ Minoris ...	May 5		- 3,14	51,96					
		11		- 1,28	50,21	14.51.11	5	15.14.51,37	+ 14,72	
		18		+ 0,75	53,81					
		June 14		+ 7,62	52,92					
	$\beta$ Ursæ Minoris R..	May 5		- 3,14	51,03					
		18		+ 0,75	49,00		3	15.14.49,38		
		June 14		+ 7,62	51,43					
345	$\beta$ Bootis .....	May 2		- 7,56	51,31	14.56.27	1	49. 1.52,88	14,40	
346	$\beta$ Libræ .....	11		- 9,01	24,87					
		13		- 8,95	24,51	15. 9. 9	3	98.50.25,90	13,60	
		June 28		- 7,29	24,67					
347	$\delta$ Bootis .....	May 18		- 5,23	16,11	15. 9.37	1	56. 8.17,83	13,57	
348	* .....	27	8.9	- 8,97	25,10	15.14.50	2	103.16.26,86	13,23	No. 348. The R.A. from the Transit observation on May 27.
		31		- 8,93	25,70					
349	$\epsilon$ Draconis .....	May 2		- 8,21	14,95					
		11		- 5,47	14,98	15.21.41	3	30.31.14,91	12,78	
		18		- 3,55	14,48					
	$\epsilon$ Draconis R .....	2		- 8,21	13,50		1	30.31.12,87		
350	H. C. 28266 .....	31		- 9,40	8,52	15.24.12	1	108.54. 9,96	12,61	No. 350. This is A.(o.)14633, the N.P.D. of which agrees with that of H. C.
351	B. (w.) xv. 472 ....	26		- 8,92	19,32	15.25.56	1	104.22.20,83	12,48	
352	$\alpha$ Coronæ .....	June 28		+ 1,42	24,55	15.28.30	1	62.47.26,27	12,31	
	$\alpha$ Coronæ R .....	May 19		- 6,46	27,38		2	62.47.28,97		
		June 28		+ 1,42	28,60					
353	B. (w.) xv. 529 ....	May 25		- 8,92	32,32	15.28.44	1	105. 1.33,85	12,30	
354	B. (w.) xv. 637 ....	31		- 8,83	6,26	15.33.28	1	105. 5. 7,79	11,96	
355	B. (w.) xv. 644 ....	31		- 8,83	35,97	15.33.50	1	105. 5.37,50	11,94	
356	B.A.C. 5188 .....	26		- 8,79	14,33	15.35.14	1	104.34.15,84	11,85	
357	$\alpha$ Serpentis .....	2		-10,02	42,32					
		8		- 9,36	40,72					
		9		- 9,25	40,18					
		11		- 9,03	40,58	15.37. 5	6	83. 6.41,32	11,70	
		June 12		- 4,99	38,92					
		28		- 3,15	40,98					
358	H. C. 28832 .....	May 27		- 8,97	30,49	15.43. 1	1	110. 8.32,15	11,29	
359	B. (w.) xv. 916 ....	June 12	7	- 8,33	51,84	15.48.21	1	104.23.53,35	10,90	
360	$\gamma$ Serpentis .....	May 8		- 9,79	31,06					
		9		- 9,63	29,98					
		17		- 8,27	30,74	15.49.43	5	73.51.31,28	10,80	
		25		- 6,87	29,41					
		31		- 5,83	29,47					
	$\gamma$ Serpentis R .....	17		- 8,27	29,53		2	73.51.31,16		
		31		- 5,83	31,97					
361	H. C. 29052 .....	23		- 8,59	59,41	15.50.58	1	106.52. 1,00	10,70	
362	H. C. 29175 .....	June 12	9	- 8,39	33,15	15.55.16	1	105.59.34,71	10,38	
363	$\beta^1$ Scorpii .....	May 8		- 8,09	4,35	15.56.57	2	109.24. 5,99	10,25	
		July 21		- 8,87	4,32					
	$\beta^1$ Scorpii R .....	21		- 8,87	7,80		1	109.24. 8,71		
364	B.A.C. 5330 .....	May 8		- 8,09	52,84	15.56.58	2	109.23.54,33	10,25	
		July 21		- 8,87	52,52					
	B.A.C. 5330 R .....	21		- 8,87	57,06		1	109.23.57,97		
365	$\theta$ Draconis .....	May 9		- 9,20	35,44					
		26		- 3,95	34,83	15.59.10	3	31. 2.36,19	10,09	
		27		- 3,64	37,82					
	$\theta$ Draconis R .....	26		- 3,95	34,93		2	31. 2.34,69		
		27		- 3,64	35,60					
366	$\delta$ Ophiuchi .....	8		- 9,23	52,38					
		9		- 9,17	52,01	16. 6.42	3	93.18.53,04	9,52	
		17		- 8,63	52,17					
367	$\tau$ Herculis .....	July 19		+ 7,33	10,05	16.16.21	1	43.20.11,31	8,77	
	$\tau$ Herculis R .....	19		+ 7,33	11,62		1	43.20.12,14		
368	Antares .....	May 26		- 7,81	7,46	16.20.28	1	116. 6. 9,20	8,44	
369	$\eta$ Draconis .....	31		- 3,96	14,80	16.22. 2	1	28. 9.14,75	8,32	
	$\eta$ Draconis R .....	31		- 3,96	16,51		1	28. 9.15,72		
370	$\zeta$ Herculis .....	July 15		+ 3,79	45,31	16.35.47	1	58. 7.47,05	7,20	
	$\zeta$ Herculis R .....	15		+ 3,79	49,48		1	58. 7.50,48		
371	B.A.C. 5642 .....	22		- 6,54	26,14		2	106.17.27,66	6,65	
		24		- 6,51	26,04	16.42.32				
372	H. C. 30641 .....	June 12		- 7,27	9,66	16.43.48	1	109. 6.11,30	6,54	
373	$\iota$ Ophiuchi .....	July 15		- 0,48	24,39	16.47. 6	1	79.35.25,19	+ 6,27	
	$\iota$ Ophiuchi R .....	15		- 0,48	27,10		1	79.35.27,16		



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
374	B.A.C. 5695 .....	July 22		- 6.44	6.83	16.47.36	2	106.34.7.97	+ 6.22	
		24		- 6.42	5.94					
375	B.A.C. 5712. ....	June 19	9	- 6.91	58.63	16.51.15	3	108.0.59.69	5.92	
		July 22		- 6.69	58.24					
		24		- 6.67	57.34					
376	H. C. 30959. ....	June 12	8.9	- 6.90	29.42	16.54.44	1	109.16.31.07	5.64	
377	A. (o.) 16266. ....	12	8.9	- 6.88	50.96	16.55.1	1	109.14.52.60	5.61	
378	B.A.C. 5743 .....	July 22		- 7.83	43.98	16.55.38	2	113.10.45.74	5.56	
		24		- 7.85	44.07					
379	H. C. 31157. ....	June 19	10	- 6.33	22.84	17.0.53	1	105.7.24.37	5.12	
380	$\alpha$ Herculis .....	July 24		+ 1.62	21.78	17.7.59	2	75.26.22.88	4.51	
		28		+ 2.14	21.92					
	$\alpha$ Herculis R. ....	24		+ 1.62	23.04		2	75.26.24.24		
		28		+ 2.14	24.86					
381	H. C. 31356 .....	June 19		- 6.26	42.22	17.8.14	1	107.44.43.83	4.50	
382	$\zeta$ Draconis .....	15		- 2.50	18.87	17.8.23	1	24.6.18.65	4.48	
	$\zeta$ Draconis R. ....	15		- 2.50	18.39		1	24.6.17.43		
383	A. (o.) 16632. ....	28		- 6.48	49.13	17.11.58	1	112.4.50.82	4.17	
384	H. C. 31954 .....	28	6	- 5.48	55.51	17.26.1	1	108.6.57.13	2.96	
385	$\psi^1$ Draconis .....	15		- 4.98	49.87	17.44.32	1	17.46.49.50	1.36	
386	B.A.C. 6048 .....	15		- 4.98	19.29	17.44.34	1	17.46.18.92	+ 1.36	
387	$\delta$ Ursæ Minoris ....	Sept. 1		+ 12.29	3.29					
		2		+ 12.49	3.00					
		4		+ 12.69	0.88					
		5		+ 12.79	3.66					
		6		+ 12.89	1.75	18.19.26	8	3.24.2.05	- 1.70	
		9		+ 13.19	3.10					
		11		+ 13.29	0.05					
		12		+ 13.39	1.13					
	$\delta$ Ursæ Minoris R. .	1		+ 12.29	1.32					
		2		+ 12.49	1.29					
		4		+ 12.69	0.56					
		5		+ 12.79	1.81					
		6		+ 12.89	3.81		8	3.24.1.18		
		9		+ 13.19	0.44					
		11		+ 13.29	3.39					
		12		+ 13.39	3.23					
	$\delta$ Ursæ Minoris SP.	Mar. 3		- 22.31	6.25		1	3.24.5.76		
	$\delta$ Ursæ Min. SP. R.	3		- 22.31	4.66		1	3.24.4.91		
388	$\beta$ Lyræ .....	Sept. 2		+ 11.05	12.66					
		6		+ 11.53	11.26	18.44.41	3	56.48.13.30	3.88	
		11		+ 12.01	10.78					
	$\beta$ Lyræ R. ....	6		+ 11.53	14.73		2	56.48.16.61		
		11		+ 12.01	16.51					
389	B.A.C. 6485. ....	Aug. 31	7	- 2.60	44.82	18.52.49	1	112.53.46.53	4.58	
390	$\epsilon$ Aquilæ .....	Sept. 1		+ 7.65	33.99	18.53.0	2	75.7.35.71	4.60	
		4		+ 7.91	35.32					
	$\epsilon$ Aquilæ R. ....	1		+ 7.65	35.69		2	75.7.36.10		
		4		+ 7.91	35.88					
391	$\gamma$ Lyræ .....	5		+ 11.55	26.91	18.53.29	1	57.30.28.65	4.64	
	$\gamma$ Lyræ R. ....	5		+ 11.55	27.88		1	57.30.28.88		
392	$\zeta$ Aquilæ .....	July 29		+ 3.12	58.45					
		Sept. 2		+ 7.52	58.21					
		6		+ 7.84	58.93	18.58.42	5	76.20.59.82	5.08	
		9		+ 8.05	60.39					
		12		+ 8.20	58.32					
	$\zeta$ Aquilæ R. ....	July 29		+ 3.12	61.42					
		Sept. 2		+ 7.52	62.06					
		6		+ 7.84	60.72		5	76.21.1.43		
		9		+ 8.05	60.56					
		12		+ 8.20	61.27					
393	H. C. 35773. ....	Aug. 31	7.8	- 0.98	28.48	19.0.25	1	108.54.30.12	5.23	
394	H. C. 36104. ....	31	9.10	- 1.50	8.62	19.7.13	1	112.5.10.31	5.79	
395	H. C. 36239. ....	Sept. 1		- 0.47	20.52	19.9.57	1	108.57.22.16	6.03	
396	H. C. 36259. ....	1		- 0.47	45.43	19.10.12	1	108.59.47.07	6.04	
397	H. C. 36426. ....	Aug. 31	8.9	- 0.30	39.59	19.14.4	1	109.17.41.24	6.36	
398	$\chi^a$ Sagittarii .....	Sept. 4		- 1.70	35.89	19.16.39	1	114.14.37.61	6.58	
399	H. C. 36666. ....	Aug. 31	7.8	+ 0.18	17.35	19.19.11	1	108.38.18.98	6.79	
400	B.A.C. 6658. ....	31		+ 0.19	55.89	19.19.35	1	108.38.57.52	- 6.83	

No. 384. On July 4, 1860, I ascertained by comparison with H. C. 31931 that there is no star in the place of H. C. 31955, which appears to be the same as H. C. 31954, with an error of 5' in N.P.D.

No. 387. On March 3,  $\delta$  Ursæ Min. SP. and  $\delta$  Ursæ Min. SP. R. were each bisected 4 times.

No. 393. This is A. (o.) 19130 and 19131, which agrees in N.P.D. with the Camb. observation. That of H. C. is 5' too small.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
401	$\pi$ Draconis.....	Sept. 6		+ 14,35	58,12					
	—	20		+ 16,61	60,59					
	—	22		+ 16,87	58,00	19. 19. 55	4	24. 33. 58,67	-6,86	
	—	25		+ 17,19	58,75					
	$\pi$ Draconis R.....	6		+ 14,35	56,94					
	—	20		+ 16,61	56,87					
	—	22		+ 16,87	56,43		4	24. 33. 55,88		
	—	25		+ 17,19	57,03					
402	B.A.C. 6666 .....	1	8	- 2,13	48,40	19. 20. 50	1	117. 16. 50,15	6,93	
403	H. C. 36828.....	4	8 $\frac{1}{4}$	+ 0,89	58,13	19. 22. 25		106. 27. 59,70	7,05	
404	H. C. 36999.....	Aug. 31	9	+ 0,50	47,21	19. 26. 25	2	109. 4. 48,55	7,39	
	—	Sept. 27		- 0,34	46,60					
405	$h^2$ Sagittarii.....	1		- 1,11	3,13	19. 27. 49	1	115. 12. 4,86	7,50	
406	B.A.C. 6707 .....	Aug. 30	8	+ 0,59	13,43					
	—	Sept. 4	7 $\frac{3}{4}$	+ 0,43	14,01	19. 27. 55	3	109. 10. 14,54	7,51	
	—	27		- 0,32	11,27					
407	$\kappa$ Aquilæ.....	6		+ 3,74	52,38	19. 29. 2	1	97. 20. 53,48	7,59	
408	$e^2$ Sagittarii.....	1		+ 1,61	40,46	19. 34. 10	1	106. 27. 42,03	8,01	
409	$\gamma$ Aquilæ.....	2		+ 8,07	19,19					
	—	4		+ 8,25	19,73	19. 39. 19	3	79. 44. 21,31	8,42	
	—	25		+ 9,49	22,63					
	$\gamma$ Aquilæ R.....	2		+ 8,07	21,63					
	—	4		+ 8,25	21,39		3	79. 44. 20,85		
	—	25		+ 9,49	19,36					
410	B.A.C. 6773 .....	Aug. 30	7.8	+ 0,76	46,30	19. 39. 23	1	111. 18. 47,98	8,42	
411	$\alpha$ Aquilæ.....	July 17		+ 1,76	48,15					
	—	Sept. 27		+ 9,59	47,13	19. 43. 40	2	81. 30. 48,37	8,77	
	$\alpha$ Aquilæ R.....	July 17		+ 1,76	50,49					
	—	Sept. 27		+ 9,59	49,62		2	81. 30. 50,05		
412	$\beta$ Aquilæ.....	July 17		+ 1,47	15,99					
	—	18		+ 1,64	13,90					
	—	Sept. 1		+ 7,19	13,97	19. 48. 8	4	83. 57. 14,99	9,12	
	—	4		+ 7,40	13,32					
	$\beta$ Aquilæ R.....	July 17		+ 1,47	15,43					
	—	Sept. 1		+ 7,19	15,39		2	83. 57. 15,36		
413	H. C. 38081.....	Aug. 31	10	+ 1,56	59,07	19. 51. 49	1	111. 15. 0,75	9,40	
414	H. C. 38086.....	Sept. 2	9 $\frac{1}{4}$	+ 0,15	8,98	19. 52. 1	1	116. 37. 10,73	9,42	
415	B.A.C. 6878 .....	27		- 0,05	2,27	19. 55. 5	1	113. 0. 3,98	9,66	
416	B. (w.) XIX. 1418 ..	5		+ 3,23	5,42	19. 56. 25	1	105. 1. 6,95	9,76	
417	H. C. 38367.....	2	9	+ 2,51	12,07	19. 58. 5	1	108. 43. 13,70	9,89	
418	H. C. 38618.....	4	9	+ 1,23	11,12					
	—	5	9 $\frac{3}{4}$	+ 1,15	9,01	20. 4. 2	2	115. 14. 11,80	10,33	
419	H. C. 38635.....	4	9 $\frac{1}{4}$	+ 1,23	57,07					
	—	5	10 $\frac{1}{4}$	+ 1,16	57,19	20. 4. 23	2	115. 17. 58,86	10,35	
420	H. C. 38782.....	2	9 $\frac{1}{4}$	+ 1,91	3,84	20. 7. 31	1	113. 57. 5,56	10,59	
421	$\alpha^1$ Capricorni.....	1		+ 4,52	19,25					
	—	11		+ 4,42	15,26	20. 9. 33	2	102. 57. 18,70	10,74	
422	$\alpha^2$ Capricorni.....	1		+ 4,52	35,08					
	—	11		+ 4,42	32,40	20. 9. 57	3	102. 59. 35,65	10,78	
	—	12		+ 4,41	35,16					
423	$\sigma$ Capricorni.....	Aug. 17		+ 3,60	11,31	20. 10. 58	1	109. 34. 12,96	10,85	
424	B.A.C. 6992.....	Sept. 5		+ 4,14	27,57	20. 12. 34	1	105. 14. 29,11	10,96	
425	$\beta$ Capricorni.....	5		+ 4,16	18,25	20. 12. 48	1	105. 14. 19,79	10,98	
426	B.A.C. 7009.....	9		+ 4,34	12,33	20. 15. 17	1	104. 43. 13,85	11,17	
427	B.A.C. 7016.....	9		+ 4,43	46,55	20. 16. 5	1	104. 34. 48,06	11,23	
428	B.A.C. 7019.....	2	8 $\frac{1}{4}$	+ 3,42	7,61					
	—	4	8 $\frac{1}{4}$	+ 3,33	9,82	20. 16. 38	2	109. 54. 10,38	11,26	
429	H. C. 39247.....	6	8 $\frac{1}{2}$	+ 4,41	5,73	20. 17. 53	1	105. 27. 7,27	11,35	
430	$\rho$ Capricorni.....	11	4	+ 3,71	31,94	20. 20. 32	1	108. 17. 33,57	11,54	
431	B.A.C. 7044.....	11	8	+ 3,70	58,80	20. 20. 40	1	108. 21. 0,43	11,55	
432	B.A.C. 7043.....	12	8 $\frac{1}{4}$	+ 3,78	49,06	20. 20. 40	1	107. 54. 50,68	11,55	
433	B.A.C. 7053.....	5	8	+ 3,82	55,50	20. 21. 30	1	109. 3. 57,14	11,61	
434	$\circ$ Capricorni.....	5	8	+ 3,82	42,54	20. 21. 31	1	109. 3. 44,18	11,61	
435	B. (w.) XX. 566....	2	10 $\frac{1}{4}$	+ 5,08	6,64	20. 22. 54	1	104. 4. 8,13	11,70	
436	B. (w.) XX. 588....	1		+ 5,11	49,54					
	—	4	9 $\frac{3}{4}$	+ 5,07	49,22	20. 23. 45	3	104. 15. 50,49	11,78	
	—	6	9	+ 5,03	48,22					
437	B. (w.) XX. 648....	9	9	+ 5,22	3,34	20. 26. 6	1	103. 53. 4,83	11,94	
438	$\theta$ Cephei.....	28		+ 18,79	45,16	20. 27. 7	1	27. 29. 45,09	-12,01	

No. 417. The N.P.D. by the observation as recorded, was 10' less. That of H. C. was verified on July 5, 1860, by equatorial comparison with H. C. 38339.

No. 426. The N.P.D. agrees with that of Piazz. The proper motion in B.A.C. is not confirmed.

No. 429. H. C. 39248, which is the same star, differs more in N.P.D.

Nos. 433 and 434. The observer's note is 'both of Mag. 8.'

No. 435. The seconds of N.P.D. by Bessel are 13",3; by H. C. 39447, 11",7.



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
439	B. (w.) xx. 681.....	Sept. 12	10	+ 5,16	28,06	20. 27. 8	1	104. 8. 29,56	- 12,01	No. 444. The R.A. is from the Transit observation on the same day.
440	B. (w.) xx. 686 ....	12	9 $\frac{1}{2}$	+ 5,17	45,33	20. 27. 14	1	104. 5. 46,82	12,01	
441	H. C. 39636 .....	11	9 $\frac{3}{4}$	+ 3,84	2,23	20. 27. 20	1	109. 35. 3,88	12,02	
442	B. (w.) xx. 731 ...	6	9 $\frac{1}{4}$	+ 5,54	31,68	20. 29. 0	1	103. 23. 33,14	12,14	
443	B. (w.) xx. 811. ...	9	8 $\frac{3}{4}$	+ 5,42	26,55	20. 31. 59	1	104. 31. 28,06	12,35	
444	*.....	25	10 $\frac{1}{2}$	+ 4,00	44,72	20. 32. 42	1	107. 53. 46,34	12,39	
445	B. (w.) xx. 876 ....	12	10 $\frac{1}{2}$	+ 5,54	2,59	20. 34. 22	1	104. 19. 4,09	12,51	
446	B. (w.) xx. 926.....	11	9 $\frac{3}{4}$	+ 5,39	2,91	20. 36. 15	1	105. 34. 4,46	12,64	
447	H. C. 40019 .....	5		+ 5,73	30,75	20. 36. 26	1	104. 42. 32,27	12,65	
448	B. (w.) xx. 950 ....	11	8 $\frac{1}{2}$	+ 5,44	39,14	20. 37. 14	1	105. 33. 40,69	12,70	
449	ψ Capricorni.....	6		+ 3,36	29,55					
		9		+ 3,13	30,14	20. 37. 27	2	115. 47. 31,59	12,72	
450	3 Aquarii.....	28		+ 7,93	32,62	20. 40. 2	1	95. 33. 33,60	12,89	
451	B. (w.) xx. 1031...	12	10	+ 5,97	33,88	20. 40. 30	1	104. 4. 35,37	12,92	
452	H. C. 40260 .....	6	9	+ 5,09	26,04	20. 44. 7	1	110. 4. 27,70	13,17	No. 452. The same as A. (o.) 20913. The magnitudes of this and the next star in Argelander are 8 and 9.
453	A. (o.) 20914.....	6	10	+ 5,08	48,37	20. 44. 16	1	110. 6. 50,03	13,18	
454	B.A.C. 7238 .....	9	8	+ 6,33	52,62	20. 44. 28	1	103. 44. 54,10	13,19	
455	B. (w.) xx. 1170 ...	5	9	+ 6,49	3,15					
		11	9 $\frac{1}{4}$	+ 6,40	2,22	20. 45. 47	2	103. 45. 4,17	13,28	
456	H. C. 40391 .....	Aug. 17		+ 6,22	52,89					No. 461. The Mag. by Bessel is 9.
		22		+ 6,16	53,90	20. 47. 33	3	107. 39. 53,73	13,39	
		28	7	+ 6,06	49,58					
457	57 Cygni .....	Sept. 28		+ 18,10	48,04					
		29		+ 18,26	45,42	20. 48. 5	2	46. 9. 48,20	13,43	
458	B. (w.) xx. 1278...	9	8 $\frac{1}{4}$	+ 6,94	49,28	20. 50. 3	1	102. 30. 50,70	13,55	
459	H. C. 40547 .....	Aug. 9		+ 6,43	31,62					
		15		+ 6,46	33,19	20. 51. 15	3	107. 26. 33,64	13,63	
		17		+ 6,46	31,31					
460	B. (w.) xx. 1394...	Sept. 11	8 $\frac{1}{4}$	+ 7,06	58,94	20. 54. 26	1	103. 1. 0,38	13,84	
461	B. (w.) xx. 1398...	11	11	+ 7,06	54,52	20. 54. 33	1	103. 4. 55,96	13,84	
462	η Capricorni .....	5		+ 5,85	41,72					
		6		+ 5,81	42,59	20. 56. 6	3	110. 25. 44,18	13,94	
		9		+ 5,65	43,21					
463	ν Aquarii .....	5		+ 7,74	33,06	21. 1. 38	1	101. 57. 34,46	14,28	Nos. 469 and 470. The difference of the N.P.D. of these stars by Bessel is 36".3. On July 5, 1860, I obtained by micrometer measures, 25".1. At the same time I considered the Mag. of the preceding star to be 9 $\frac{1}{4}$ , and that of the other 9.
464	H. C. 41078 .....	Aug. 28	8	+ 6,61	21,46	21. 4. 17	1	111. 36. 23,15	14,45	
465	H. C. 41177 .....	30	8.9	+ 6,84	19,05	21. 6. 39	1	110. 40. 20,72	14,59	
466	ζ Cygni.....	24		+ 10,06	8,56					
		Sept. 11		+ 13,97	6,25					
		12		+ 14,16	7,34	21. 6. 43	5	60. 22. 9,10	14,59	
		28		+ 16,61	6,29					
		29		+ 16,73	8,34					
	ζ Cygni R.....	11		+ 13,97	12,30		1	60. 22. 13,30		
467	δ Equulei .....	4		+ 10,96	53,20	21. 7. 22	1	80. 34. 53,96	14,63	
468	B.A.C. 7378.....	Aug. 28	7	+ 7,00	35,33	21. 8. 23	1	110. 46. 37,01	14,69	
469	B. (w.) xxi. 227 ...	Sept. 27	10	+ 7,16	4,94	21. 10. 40	1	104. 37. 6,45	14,83	
470	B. (w.) xxi. 231....	27	10	+ 7,18	41,65	21. 11. 4	1	104. 36. 43,16	14,84	
471	B.A.C. 7396.....	July 20		+ 6,86	21,51	21. 11. 8	1	106. 47. 23,09	14,85	
472	H. C. 41400 .....	Aug. 30	8	+ 8,07	55,51	21. 12. 9	1	104. 6. 57,00	14,91	No. 476. The N.P.D. of H. C. 41581, which is the same star, is greater by 12", and agrees with that of the Camb. observation. No. 478. See the note to No. 912 in p. 111 of Vol. XVIII, which is the same star.
473	α Cephei.....	Sept. 28		+ 18,96	54,61	21. 15. 5	2	28. 1. 54,33	15,09	
		29		+ 19,17	54,15					
474	H. C. 41544 .....	Aug. 30	8	+ 8,48	53,03	21. 15. 46	1	102. 40. 54,46	15,13	
475	18 Aquarii.....	July 20	7	+ 6,77	4,74	21. 16. 13	1	103. 30. 6,21	15,14	
476	H. C. 41580.....	Aug. 28	8	+ 8,55	7,49	21. 16. 45	1	102. 24. 8,91	15,17	
477	B. (w.) xxi. 399...	Sept. 20	9 $\frac{1}{4}$	+ 7,86	51,22	21. 17. 34	1	104. 34. 52,73	15,22	
478	A. (o.) 21400 .....	6	8 $\frac{3}{4}$	+ 7,35	23,13	21. 19. 14	1	110. 50. 24,81	15,32	
479	A. (o.) 21401 .....	6	9	+ 7,34	47,98	21. 19. 16	1	110. 53. 49,66	15,32	
480	B.A.C. 7451 .....	July 20	8	+ 6,79	41,61	21. 19. 44	2	102. 17. 42,44	15,34	
		Sept. 11		+ 8,69	40,45					
481	B. (w.) xxi. 456....	9	9	+ 8,44	49,16	21. 19. 56	1	104. 3. 50,65	15,36	
482	B. (w.) xxi. 463 ...	11		+ 8,71	45,71	21. 20. 15	1	102. 23. 47,13	15,38	
483	B. (w.) xxi. 493...	Aug. 28	8.9	+ 8,97	56,48					No. 476. The N.P.D. of H. C. 41581, which is the same star, is greater by 12", and agrees with that of the Camb. observation. No. 478. See the note to No. 912 in p. 111 of Vol. XVIII, which is the same star.
		30	10	+ 9,02	58,39	21. 21. 26	2	100. 53. 58,79	15,45	
484	B. (w.) xxi. 502....	Sept. 4		+ 8,76	4,89	21. 21. 54	1	103. 8. 6,34	15,47	
485	B.A.C. 7470.....	27		+ 7,78	34,96	21. 22. 41	1	104. 55. 36,49	15,51	
486	β Aquarii.....	28		+ 10,07	36,84					
		29		+ 10,05	35,15	21. 23. 52	3	96. 12. 37,20	15,58	
		Oct. 2		+ 9,99	36,55					
487	B.A.C. 7485 .....	July 20	7	+ 7,66	22,83	21. 25. 36	1	106. 50. 24,41	15,68	
488	B.A.C. 7487 .....	Aug. 30		+ 8,92	43,83	21. 26. 19	1	104. 7. 45,02	- 15,71	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
489	H. C. 41941 .....	Sept. 20	9	+ 7.84	8.13	21.26.36	1	107.10.9.73	-15.73	
490	B.A.C. 7507 .....	July 20		+ 8.15	17.91	21.29.12	1	109.5.19.55	15.87	
491	B. (w.) XXI. 696 .....	Aug. 28	10.11	+ 9.19	46.05	21.29.32	1	103.27.47.51	15.88	
492	γ Capricorni .....	24		+ 9.03	5.92	21.32.0	1	107.19.7.52	16.02	
493	κ Capricorni .....	Sept. 9		+ 8.44	42.34					
		11		+ 8.34	43.51	21.34.30	3	109.31.44.49	16.15	
		20		+ 7.82	42.68					
494	B. (w.) XXI. 828 .....	Aug. 28	8.9	+ 9.55	15.00	21.34.43	1	102.42.16.43	16.16	
495	B. (w.) XXI. 835 .....	28	8.9	+ 9.58	10.09	21.34.50	1	102.39.11.51	16.16	
496	ε Pegasi .....	Sept. 29		+ 14.04	29.28					
		Oct. 2		+ 14.19	30.50	21.37.1	2	80.47.30.65	16.28	
497	δ Capricorni .....	Sept. 11		+ 9.09	11.78	21.38.59	1	106.47.13.36	16.38	
498	B. (w.) XXI. 966 .....	9	9	+ 9.85	4.61	21.40.12	1	102.49.6.04	16.44	No. 498 and 499. The difference of the N.P.D. of these stars by Bessel is 1'. 23".4. By micrometer measures on July 5, 1860, I obtained 1'. 19".6.
499	B. (w.) XXI. 967 .....	9	10½	+ 9.85	21.16	21.40.14	1	102.50.22.59	16.44	
500	μ Capricorni .....	1		+ 10.05	11.39					
		20		+ 9.61	10.93	21.45.20	3	104.14.11.69	16.69	
		28	7.8	+ 9.26	8.24					
501	B. (w.) XXI. 1126 .....	11	9	+ 10.00	29.32	21.48.13	1	104.43.30.84	16.83	
502	B. (w.) XXI. 1146 .....	9	9	+ 10.20	26.18	21.49.1	1	104.2.27.67	16.87	
503	H. C. 42806 .....	20	9	+ 10.03	24.87	21.50.31	1	103.43.26.35	16.94	
504	B. (w.) XXI. 1227 .....	Aug. 31		+ 10.55	53.97	21.52.39	1	103.37.55.44	17.04	
505	H. C. 42891 .....	Sept. 1	9	+ 10.91	22.46	21.52.51	1	99.13.23.70	17.05	
506	H. C. 42928 .....	9	8½	+ 10.93	30.87	21.54.3	1	100.34.32.20	17.10	
507	α Aquarii .....	28		+ 12.83	34.51					
		29		+ 12.84	36.85	21.58.17	3	91.1.37.15	17.29	
		Oct. 2		+ 12.87	35.94					
508	B. (w.) XXI. 1398 .....	Sept. 9		+ 11.11	26.59	22.0.45	1	102.19.28.00	17.40	
509	ε² Aquarii .....	1		+ 11.23	50.26	22.2.49	2	102.16.51.52	17.49	
		9		+ 11.22	49.96					
510	ζ Cephei .....	29		+ 18.86	4.73	22.5.48	2	32.31.4.19	17.62	
		Oct. 2		+ 19.65	3.13					
511	B. (w.) XXII. 140 .....	Sept. 20	8½	+ 12.04	4.37	22.7.46	2	97.45.4.30	17.70	
		21		+ 12.04	1.94					
512	B. (w.) XXII. 161 .....	20	9	+ 12.07	3.42	22.8.25	2	97.48.5.01	17.73	
		21		+ 12.06	4.32					
513	θ Aquarii .....	2		+ 11.81	29.16	22.9.8	1	98.30.30.36	17.75	
514	ε Cephei .....	28		+ 18.56	57.43	22.9.39	1	33.40.57.79	17.78	
515	B. (w.) XXII. 231 .....	Aug. 31	8	+ 11.80	49.09	22.11.53	1	100.31.50.42	17.86	
516	ρ Aquarii .....	Sept. 2		+ 11.97	6.50	22.12.31	1	98.33.7.70	17.89	
517	B.A.C. 7804 .....	Aug. 30	7	+ 12.06	51.07					
		31	7.8	+ 12.11	51.33	22.15.53	2	97.55.52.35	18.02	
518	B. (w.) XXII. 323 .....	Sept. 27	10	+ 11.89	28.83	22.16.4	1	100.25.30.15	18.02	
519	B. (w.) XXII. 345 .....	Aug. 29	8	+ 12.02	13.74	22.16.43	1	100.32.15.07	18.06	
520	B. (w.) XXII. 415 .....	Sept. 21		+ 11.82	45.67	22.19.41	1	103.0.47.11	18.16	
521	B. (w.) XXII. 420 .....	21		+ 11.82	28.46	22.19.55	1	103.1.29.90	18.17	
522	ζ Aquarii .....	Aug. 24		+ 11.88	51.75					
		Sept. 29		+ 13.88	52.64	22.21.19	3	90.45.53.09	18.22	
		Oct. 2		+ 13.91	52.67					
523	B. (w.) XXII. 459 .....	Aug. 30	10	+ 12.27	1.18	22.21.57	1	102.16.2.59	18.25	
524	B. (w.) XXII. 479 .....	Sept. 2	10	+ 12.50	56.79	22.22.53	1	98.27.57.98	18.28	
525	σ Aquarii .....	27		+ 12.05	22.33	22.22.55	1	101.25.23.70	18.28	
526	B. (w.) XXII. 519 .....	Aug. 29	7.8	+ 12.46	1.79	22.24.53	1	97.13.2.89	18.35	
527	B. (w.) XXII. 589 .....	30	8	+ 12.66	33.23	22.28.14	1	98.5.34.40	18.47	
528	B. (w.) XXII. 599 .....	Sept. 21		+ 13.33	25.63	22.28.43	1	95.54.26.63	18.48	
529	B. (w.) XXII. 608 .....	Aug. 29		+ 12.66	55.47					
		Sept. 27	10½	+ 12.62	(47.85)	22.29.6	1	100.8.56.78	18.50	No. 529. The observation of Sept. 27 is considered too uncertain.
530	B. (w.) XXII. 612 .....	Aug. 29	9	+ 12.66	37.34	22.29.15	2	100.8.39.65	18.51	
		Sept. 27	9¾	+ 12.62	39.34					
531	B.A.C. 7892 sf .....	Aug. 30	9	+ 12.77	62.30	22.31.47	1	103.22.3.76	18.59	
532	B.A.C. 7892 np .....	31	8.9	+ 12.79	58.21	22.31.47	1	103.21.59.67	18.59	No. 532. It has been assumed that the north star was bisected on this day.
533	ζ Pegasi .....	24		+ 11.67	44.56					
		Sept. 1		+ 12.87	44.47	22.34.11	3	79.55.45.63	18.66	
		Oct. 2		+ 16.15	45.53					
534	B. (w.) XXII. 747 .....	Aug. 31	9	+ 12.97	51.79	22.35.12	1	103.6.53.24	18.70	
535	η Pegasi .....	Sept. 28		+ 17.71	25.91	22.36.10	1	60.32.27.64	18.73	
536	H. C. 44506 .....	Aug. 29	8	+ 12.98	33.57	22.37.49	2	91.56.35.19	18.78	
		30	8	+ 13.05	35.23					
537	τ¹ Aquarii .....	Sept. 27		+ 12.39	26.95	22.39.57	1	104.49.28.47	18.85	
538	B.A.C. 7951 nf .....	Aug. 31	8	+ 13.24	4.86	22.40.19	1	94.59.5.80	-18.86	



Catalogue Number.	Name of Star.	Day of Observation.	Observed Mag.	Correction to Mean N.P.D.	Seconds of N.P.D. Jan. 1, 1854, as observed.	Approximate R.A. Jan. 1, 1854.	Number of Obs.	Concluded Mean N.P.D. Jan. 1, 1854.	Annual Variation.	Notes.
				"	"	h. m. s.		° ' "	"	
539	$\tau^s$ Aquarii .....	Sept. 27		+ 12,58	42,45	22.41.51	1	104.21.43,95	- 18,90	
540	B. (w.) xxii. 918 ..	Aug. 30	9	+ 13,43	28,44	22.43.54	2	102.48.28,02	18,96	
		31		+ 13,45	24,73					
541	$\delta$ Cephei .....	Oct. 2		+ 18,63	1,42	22.44.30	2	24.34.1,27	18,98	
		3		+ 18,94	1,52					
542	B. (w.) xxii. 933 ..	Aug. 29	7	+ 13,45	56,65	22.45.4	1	100.49.57,99	18,99	
543	B. (w.) xxii. 1029 ..	29	10	+ 13,60	36,50	22.49.29	1	97.35.37,63	19,11	
544	* .....	31		+ 13,93	37,58	22.52.59	1	102.52.39,02	19,20	
545	* .....	30		+ 14,04	36,61	22.53.49	1	102.49.38,04	19,22	
546	B. (w.) xxii. 1134 ..	Sept. 11	9	+ 14,81	17,61	22.54.5	1	93.26.18,46	19,23	
547	B. (w.) xxii. 1141 ..	11	8 $\frac{3}{4}$	+ 14,81	8,13	22.54.24	1	93.28.8,98	19,24	
548	$\alpha$ Andromedæ .....	6		+ 11,98	25,24	22.55.13	1	48.27.26,78	19,26	
549	$\alpha$ Pegasi .....	Aug. 24		+ 11,63	45,72	22.57.29	1	75.34.46,73	19,31	
550	$\chi$ Aquarii .....	Sept. 27		+ 14,82	18,41	23.9.17	1	98.31.19,61	19,57	
551	$\alpha$ Cephei .....	Aug. 21		+ 2,36	11,17	23.12.39	1	22.41.10,90	19,63	
	$\alpha$ Cephei R .....	21		+ 2,36	11,73		1	22.41.10,72		
552	$\tau$ Pegasi .....	Sept. 6		+ 13,45	26,86	23.13.25	1	67.3.28,45	19,64	
553	B. (w.) xxiii. 491 ..	26	9	+ 15,94	58,93	23.24.37	1	93.49.59,80	19,82	
554	B. (w.) xxiii. 511 ..	26	8	+ 15,97	18,72	23.25.25	1	93.49.19,59	19,83	
555	$\lambda$ Andromedæ .....	Aug. 21		+ 5,55	54,17	23.30.26	2	44.19.56,03	19,89	
		Oct. 2		+ 18,25	55,22					
556	$\gamma$ Cephei .....	Aug. 21		- 0,05	57,42	23.33.24	1	13.10.57,05	19,92	
557	B. (w.) xxiii. 702 ..	Sept. 26	8 $\frac{1}{2}$	+ 15,85	53,28	23.34.5	1	99.37.54,55	19,93	
558	* .....	26	9 $\frac{1}{4}$	+ 15,87	45,17	23.34.32	1	99.37.46,42	19,93	
559	B. (w.) xxiii. 713 ..	26	9	+ 15,89	6,93	23.34.52	1	99.38.8,20	19,93	
560	$\psi$ Andromedæ .....	Oct. 3		+ 18,30	19,79	23.38.49	1	44.23.(21,12)	19,97	
561	$\omega$ Piscium .....	3		+ 17,62	39,08	23.51.49	1	83.56.39,77	20,04	
562	B. (w.) xxiii. 1090.	Dec. 7	10.11	+ 15,46	49,41	23.53.6	1	89.44.50,13	- 20,05	

Nos. 544 and 545. The R.A. are from the Transit observations on the same day. The Mag. of the stars may be considered to be nearly that of Proserpine, for which they were taken.

No. 558. The R.A. was obtained by equatorial comparisons with B. (w.) xxiii. 702 and 713, on July 6, 1860.

No. 560. The observations taken by T for trial are not altogether trustworthy. This appears to be discordant.

No. 562. The circumstances were unfavourable for estimation of Magnitude.



HORIZONTAL AND VERTICAL MEASURES  
OF  
THE DIAMETERS OF THE SUN,  
COMPARED WITH TABULAR DIAMETERS:  
AND  
RIGHT ASCENSIONS AND NORTH POLAR DISTANCES  
OF THE SUN,  
AND THE PLANETS MELPOMENE, EUTERPE, URANIA, IRIS, MAS-  
SILIA, HEBE, LUTETIA, FORTUNA, AMPHITRITE, EGERIA,  
IRENE, THALIA, EUNOMIA, PROSERPINE, BELLONA,  
CALLIOPE, HYGEIA, AND NEPTUNE,  
CONCLUDED FROM  
OBSERVATIONS WITH THE TRANSIT AND MURAL CIRCLE,  
AND COMPARED WITH  
CALCULATED RIGHT ASCENSIONS AND NORTH POLAR DISTANCES.

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1854.



SIDEREAL INTERVALS occupied by TRANSITS of the SUN'S DIAMETER, and VERTICAL DIAMETERS of the SUN corrected for REFRACTION and PARALLAX; compared with the values in the NAUTICAL ALMANAC.

Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam.	Day of Observation.	Interval by Observation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam.
1854.	m. s.	s.	s.	"	"	"	1854.	m. s.	s.	s.	"	"	"
Jan. 2				32. 36,50	34,53	- 1,97	June 26	2. 17,70	17,69	- 0,01	31. 33,70	30,19	- 3,51
14	2. 20,28	20,22	- 0,06	33,99	33,73	- 0,26	30	17,40	17,49	+ 0,09	31,95	30,19	- 1,76
19	19,28	19,27	- 0,01	32,38	32,93	+ 0,55	July 3	17,05	17,27	+ 0,22	30,39	30,19	- 0,20
21	18,86	18,85	- 0,01	29,66	32,53	+ 2,87	18	15,53	15,49	- 0,04	32,79	31,19	- 1,60
25	17,93	17,97	+ 0,04	31,44	31,53	+ 0,09	19	15,18	15,33	+ 0,15	33,70	31,39	- 2,31
Feb. 2	16,20	16,15	- 0,05	28,10	29,53	+ 1,43	20	15,21	15,19	- 0,02	33,22	31,59	- 1,63
3	16,02	15,94	- 0,08	28,40	29,13	+ 0,73	21	15,04	15,03	- 0,01	36,77	31,59	- 5,18
4	15,70	15,69	- 0,01	25,54	28,73	+ 3,19	22	14,81	14,87	+ 0,06	30,33	31,79	+ 1,46
6	15,29	15,23	- 0,06	28,92	28,13	- 0,79	24	14,56	14,53	- 0,03	35,08	32,19	- 2,89
9				26,64	27,13	+ 0,49	25	14,40	14,37	- 0,03	33,00	32,39	- 0,61
10				26,31	26,74	+ 0,43	29				36,49	33,19	- 3,30
13	13,68	13,67	- 0,01				Aug. 7				35,18	35,79	+ 0,61
14	13,77	13,45	- 0,32	22,79	25,14	+ 2,35	10				36,47	36,59	+ 0,12
16	13,06	13,03	- 0,03	22,02	24,34	+ 2,32	16	10,73	10,67	- 0,06	37,75	38,78	+ 1,03
18	12,66	12,63	- 0,03	23,55	23,54	- 0,01	19	10,23	10,23	0,00	34,87	39,78	+ 4,91
21	12,03	12,05	+ 0,02	20,96	22,14	+ 1,18	23	9,64	9,68	+ 0,04	39,17	41,38	+ 2,21
22	11,99	11,87	- 0,12	20,32	21,74	+ 1,42	24	9,43	9,56	+ 0,13	40,08	41,78	+ 1,70
23	11,72	11,69	- 0,03	16,75	21,14	+ 4,39	25	9,63	9,44	- 0,19	42,11	42,18	+ 0,07
25	11,58	11,33	- 0,25	16,79	20,14	+ 3,35	26	9,44	9,32	- 0,12	38,92	42,58	+ 3,66
27	11,07	11,01	- 0,06	17,95	19,34	+ 1,39	28	9,11	9,10	- 0,01	41,67	43,58	+ 1,91
Mar. 2	10,58	10,55	- 0,03	16,35	17,94	+ 1,59	29	9,02	9,00	- 0,02	47,92	43,98	- 3,94
3	10,48	10,41	- 0,07	20,01	17,34	- 2,67	30	9,00	8,90	- 0,10	43,68	44,38	+ 0,70
6	10,19	10,02	- 0,17	15,55	15,95	+ 0,40	31	8,75	8,80	+ 0,05	45,14	44,98	- 0,16
9	9,87	9,70	- 0,17	15,12	14,35	- 0,77	Sept. 1	8,77	8,70	- 0,07			
13	9,41	9,32	- 0,09	14,64	12,15	- 2,49	2	8,71	8,62	- 0,09	47,06	45,78	- 1,28
17	9,14	9,04	- 0,10	10,07	10,15	+ 0,08	4	8,61	8,46	- 0,15	50,50	46,78	- 3,72
30				2,65	2,76	+ 0,11	6	8,40	8,32	- 0,08	50,27	47,77	- 2,50
31	8,76	8,82	+ 0,06				8	8,30	8,22	- 0,08	49,50	48,77	- 0,73
Apr. 1	8,86	8,84	- 0,02	2,75	1,76	- 0,99	9	8,24	8,16	- 0,08	55,07	49,37	- 5,70
3				32. 2,67	0,56	- 2,11	11	8,04	8,08	+ 0,04	51,81	50,17	- 1,64
4				31. 57,64	0,16	+ 2,52	12				55,45	50,77	- 4,68
5				61,78	59,56	- 2,22	13	7,97	8,02	+ 0,05	49,88	51,17	+ 1,29
6				60,45	58,96	- 1,49	15				51,37	52,17	+ 0,80
7				59,14	58,36	- 0,78	16	8,05	7,98	- 0,07	54,76	52,77	- 1,99
8	9,16	9,22	+ 0,06	58,31	57,96	- 0,35	19	8,13	8,00	- 0,13			
10	9,63	9,36	- 0,27	55,75	56,97	+ 1,22	22	8,05	8,06	+ 0,01			
11	9,33	9,44	+ 0,06	60,09	56,37	- 3,72	25	8,15	8,18	+ 0,03			
12				55,45	55,77	+ 0,32	26	8,30	8,22	- 0,08	59,01	58,16	- 0,85
13	9,64	9,62	- 0,02	55,53	55,17	- 0,36	27	8,29	8,28	- 0,01	60,02	58,56	- 1,46
18	10,28	10,14	- 0,14	53,28	52,57	- 0,71	28	8,19	8,36	+ 0,17	61,44	59,16	- 2,28
20	10,35	10,37	+ 0,02	54,46	51,57	- 2,89	29	8,54	8,42	- 0,12	59,56	59,76	+ 0,20
May 4	12,29	12,41	+ 0,12	50,19	44,78	- 5,41	30	8,60	8,50	- 0,10	63,66	60,36	- 3,30
5	12,52	12,57	+ 0,05	43,68	44,18	+ 0,50	Oct. 2	8,50	8,68	+ 0,18	57,35	61,56	+ 4,21
8	13,03	13,07	+ 0,04				3	8,83	8,78	- 0,05	31. 59,17	61,96	+ 2,79
9	13,29	13,23	- 0,06	43,70	42,58	- 1,12	4	8,84	8,88	+ 0,04			
12	13,68	13,73	+ 0,05	41,93	41,18	- 0,75	5	9,14	8,98	- 0,16			
15				42,14	39,98	- 2,16	7	9,30	9,22	- 0,08			
17	14,81	14,55	- 0,26				10	9,69	9,60	- 0,09			
23	15,23	15,47	+ 0,24	37,21	36,99	- 0,22	12	9,77	9,88	+ 0,11			
25	15,74	15,75	+ 0,01	35,53	36,39	+ 0,86	13	10,02	10,04	+ 0,02			
26	15,95	15,89	- 0,06	39,16	36,19	- 2,97	17	10,74	10,67	- 0,07			
June 1	16,68	16,65	- 0,03				21				32. 9,20	11,95	+ 2,75
10				33,00	32,39	- 0,61	23	11,82	11,81	- 0,01	13,05	12,95	- 0,10
17				32,77	31,19	- 1,58	24	11,99	12,01	+ 0,02	9,77	13,55	+ 3,78
19	17,81	17,81	0,00	29,49	30,79	+ 1,30	26	12,45	12,43	- 0,02	32. 10,44	14,55	+ 4,11
24	2. 17,79	17,75	- 0,04	31. 31,25	30,39	- 0,86	27	2. 12,62	12,63	+ 0,01			

Feb. 25. The first Limb was observed at only two wires.

April 8. The transit of 2 L at only two wires.



Day of Observation.	Interval by Obser- vation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .	Day of Observation.	Interval by Obser- vation.	Seconds of Tabular Interval.	Excess of Tabular Interval.	Vertical Diameter by Observation.	Seconds of Tabular Diameter.	Excess of Tabular Diam <sup>r</sup> .
1854.	m. s.	s.	s.	"	"	"	1854.	m. s.	s.	s.	"	"	"
Oct. 28	2 . 12,75	12,85	+ 0,10				Dec. 4	2 . 20,84	20,94	+ 0,10	32 . 31,01	30,73	- 0,28
30	13,41	13,29	- 0,12				6	21,35	21,24	- 0,11	30,79	31,33	+ 0,54
31	13,59	13,51	- 0,08				7	21,52	21,38	- 0,14	33,69	31,53	- 2,16
Nov. 1	13,72	13,75	+ 0,03				9	21,62	21,62	0,00	34,21	31,93	- 2,28
3	14,15	14,21	+ 0,06				11	21,84	21,84	0,00	33,31	32,33	- 0,98
4	14,49	14,45	- 0,04				12	22,07	21,94	- 0,13	34,82	32,53	- 2,29
6	14,91	14,91	0,00				15	22,40	22,18	- 0,22	34,32	33,13	- 1,19
7	15,04	15,15	+ 0,11				16	22,36	22,24	- 0,12	30,63	33,33	- 2,70
9	15,65	15,63	- 0,02				19	22,53	22,38	- 0,15	34,26	33,73	- 0,53
10	15,82	15,87	+ 0,05				23	22,31	22,44	+ 0,13	33,43	34,13	+ 0,70
11	16,05	16,11	+ 0,06				26	22,49	22,38	- 0,11	37,01	34,33	- 2,68
27	19,69	19,71	+ 0,02	32 . 28,97	28,53	- 0,44	27	22,45	22,34	- 0,11	36,06	34,53	- 1,53
30	20,21	20,26	+ 0,05	30,22	29,53	- 0,69	28	2 . 22,45	22,30	- 0,15	32 . 38,27	34,53	- 3,74
Dec. 1	2 . 20,39	20,44	+ 0,05	32 . 29,35	29,93	+ 0,58							
Dec. 6. The transit of 2 L at only one wire.													



Greenwich Mean Solar Time of Transit of Centre.				Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		m. s.	h. m. s.	s.	s.		"	"	° ' "	"	"
Jan.	2.	0.	3.57,3	II.	1. 10,96	18.51.31,61	31,32	-0,29		8,41		112.55.50,45	50,89	+0,44
	14.	0.	8.59,9			19.43.53,70	53,50	-0,20		8,34		111.18.45,61	45,07	-0,54
	19.	0.	10.40,0			20.5.16,86	16,62	-0,24		8,29		110.20.27,42	28,40	+0,98
	20.	0.	10.57,9	II.	1. 9,53	20.9.31,40	31,11	-0,29	N.	8,27	16.16,36	110.7.37,92	38,91	+0,99
	21.	0.	11.15,1			20.13.45,16	44,87	-0,29		8,27		109.54.25,80	26,71	+0,91
	25.	0.	12.16,0			20.30.32,53	32,30	-0,23		8,22		108.57.58,31	58,84	+0,53
	30.	0.	13.14,5	II.	1. 8,41	20.51.13,95	13,68	-0,27	S.	8,16	16.15,07	107.39.35,51	38,26	+2,75
Feb.	2.	0.	13.39,7			21.3.28,91	28,58	-0,33		8,10		106.48.48,61	48,88	+0,27
	3.	0.	13.46,4			21.7.32,13	31,87	-0,26		8,09		106.31.18,42	16,78	-1,64
	4.	0.	13.52,2			21.11.34,48	34,31	-0,17		8,07		106.13.27,80	27,59	-0,21
	6.	0.	14.1,6			21.19.37,07	36,67	-0,40		8,03		105.36.59,39	59,39	0,00
	9.	0.	14.8,9							7,97		104.40.18,12	19,31	+1,19
	10.	0.	14.10,1	II.	1. 7,17	21.35.31,76	31,51	-0,25		7,95		104.20.55,69	56,21	+0,52
	13.	0.	14.8,3			21.47.19,67	19,33	-0,34						
	14.	0.	14.6,0			21.51.13,96	13,76	-0,20		7,86		103.1.6,42	5,72	-0,70
	16.	0.	13.59,9			21.59.0,87	0,42	-0,45		7,81		102.19.52,90	53,23	+0,33
	18.	0.	13.50,5			22.6.44,60	44,26	-0,34		7,76		101.37.53,97	53,54	-0,43
	21.	0.	13.31,6			22.18.15,28	15,01	-0,27		7,68		100.33.32,85	32,24	-0,61
	22.	0.	13.4,4			22.22.4,12	3,99	-0,13		7,66		100.11.45,11	44,95	-0,16
	23.	0.	13.15,8			22.25.52,59	52,35	-0,24		7,63		99.49.48,09	48,15	+0,06
	25.	0.	12.57,6		1. 5,67	22.33.27,49	27,27	-0,22		7,57		99.5.26,37	28,15	+1,78
	27.	0.	12.37,1			22.41.0,03	59,88	-0,15		7,51		98.20.34,15	35,46	+1,32
	28.	0.	12.26,1	I.	1. 5,43	22.44.45,51	45,35	-0,16	S.	7,50	16.9,47	97.57.58,81	57,96	-0,85
Mar.	2.	0.	12.2,4			22.52.14,84	14,71	-0,13		7,42		97.12.21,30	22,56	+1,26
	3.	0.	11.49,9			22.55.58,83	58,63	-0,20		7,39		96.49.23,54	25,56	+2,02
	6.	0.	11.9,1			23.7.7,63	7,51	-0,12		7,29		95.40.2,47	2,27	-0,20
	9.	0.	10.24,3			23.18.12,36	12,48	+0,12		7,19		94.29.57,70	58,97	+1,27
	13.	0.	9.20,2			23.32.54,25	54,02	-0,23		7,05		92.55.47,32	50,17	+2,85
	17.	0.	8.11,1			23.47.31,25	31,10	-0,15		6,91		91.21.10,94	11,57	+0,63
	29.	0.	4.32,1	II.	1. 4,39	0.31.10,28	10,13	-0,15	S.	6,46	16.1,68	86.37.55,18	58,27	+3,09
	30.	0.	4.13,6							6,40		86.14.38,46	38,27	-0,19
	31.	0.	3.55,3			0.38.26,48	26,47	-0,01	N.	6,32	16.1,08	85.51.19,10	22,47	+3,37
April	1.	0.	3.36,6			0.42.4,30	4,76	+0,46		6,32		85.28.10,28	11,27	+0,99
	3.	0.	3.1,0							6,23		84.42.1,75	4,06	+2,31
	4.	0.	2.43,1							6,19		84.19.6,57	8,96	+2,39
	5.	0.	2.25,5	II.	1. 4,51	0.56.39,23	39,01	-0,22		6,15		83.56.16,32	19,76	+3,44
	6.	0.	2.7,8							6,11		83.33.34,95	37,06	+2,11
	7.	0.	1.50,5	I.	1. 4,57	1.3.57,20	57,06	-0,14		6,07		83.10.57,49	0,96	+3,47
	8.	0.	1.33,7		1. 4,61	1.7.36,93	36,38	-0,55		6,03		82.48.27,57	32,05	+4,48
	10.	0.	0.59,7			1.14.55,93	55,71	-0,22		5,94		82.3.55,05	56,65	+1,60
	11.	0.	0.43,3			1.18.36,98	35,76	-0,22		5,90		81.41.49,25	50,85	+1,60
	12.	0.	0.26,9							5,86		81.19.51,02	53,45	+2,43
	13.	0.	0.11,2			1.25.56,94	56,73	-0,21		5,82		80.58.1,51	4,64	+3,13
	16.	23.59.11,3		II.	1. 5,02	1.40.43,06	42,72	-0,34	N.	5,62	15.56,58	79.32.33,59	22,33	(-11,26)
	17.	23.58.57,1				1.44.25,42	25,18	-0,24		5,61		79.11.18,98	21,53	+2,55
	19.	23.58.30,6				1.51.51,92	51,33	-0,59		5,53		78.29.49,77	51,72	+1,95
May	3.	23.56.15,6				2.44.48,37	48,12	-0,25		5,00		74.2.49,11	48,97	-0,14
	4.	23.56.9,9				2.48.39,19	38,91	-0,28		4,96		73.45.32,78	33,17	+0,39
	5.	23.56.4,4		I.	1. 6,37	2.52.30,27	30,25	-0,02						
	7.	23.55.55,9				3.0.14,80	14,59	-0,21						
	8.	23.55.52,4				3.4.7,90	7,60	-0,30		4,82		72.39.13,55	15,05	+1,50
	9.	23.55.49,4		II.	1. 6,71	3.8.1,44	1,17	-0,27	N.	4,76	15.51,09	72.23.21,60	23,25	+1,65
	11.	23.55.45,2				3.15.50,29	50,03	-0,26		4,73		71.52.32,04	32,94	+0,90
	14.	23.55.43,3		II.	1. 7,12	3.27.38,12	37,66	-0,46		4,64		71.8.33,43	34,62	+1,19
	16.	23.55.44,6				3.35.32,54	32,33	-0,21	S.	4,64	15.49,59	70.40.52,49	50,31	-2,18
	22.	23.56.3,0				3.59.30,33	30,15	-0,18		4,41		69.25.33,69	33,78	+0,09
	24.	23.56.13,6				4.7.34,02	33,82	-0,20		4,36		69.3.14,54	14,07	-0,47
	25.	23.56.19,5				4.11.36,54	36,42	-0,12		4,34		68.52.35,62	36,46	+0,84
	26.	23.56.26,2		I.	1. 8,01	4.15.39,76	39,52	-0,24						
	29.	23.56.48,1		I.	1. 8,20	4.27.51,38	51,60	+0,22	S.	4,29	15.47,39	68.13.47,94	46,64	-1,30
	30.	23.56.56,5		I.	1. 8,26	4.31.56,41	56,49	+0,08						
	31.	23.57.5,4				4.36.1,86	1,80	-0,06						
June	9.	23.58.39,1		I.	1. 8,73	5.13.4,86	4,91	+0,05		4,09		66.58.43,55	44,17	+0,62
	12.	23.59.15,4		II.	1. 8,82	5.25.30,90	30,73	-0,17						
	17.	0.0.5,9		II.	1. 8,88	5.42.7,75	7,58	-0,17		4,04		66.36.17,04	15,52	-1,52

April 1. I am unable to account for the discordance of the Transit observation, which appeared to be satisfactory.  
 April 17. See the note to the Circle observation.



Greenwich Mean Solar Time of Transit of Centre.	Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semidiameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		m. s.	h. m. s.	s.	s.		"	"	"	"	"
June 19. 0. 0. 31,8			5. 50. 26,86	26,68	-0,18		4,03		66. 33. 31,61	31,71	+0,10
24. 0. 1. 36,8			6. 11. 14,81	14,83	+0,02		4,03		66. 33. 56,96	56,38	-0,58
26. 0. 2. 2,4			6. 19. 33,61	33,70	+0,09		4,04		66. 37. 0,92	59,76	-1,16
28. 0. 2. 27,7	II.	1. 8,80	6. 27. 52,16	51,99	-0,17						
30. 0. 2. 50,9			6. 36. 8,54	9,50	(+0,96)		4,06		66. 48. 4,06	2,64	-1,42
July 3. 0. 3. 26,6			6. 48. 34,02	33,88	-0,14		4,09		67. 0. 36,06	36,22	+0,16
18. 0. 5. 29,0			7. 49. 45,11	45,12	+0,01		4,34		68. 56. 8,34	8,03	-0,32
19. 0. 5. 33,6			7. 53. 46,22	46,19	-0,03		4,36		69. 6. 49,30	48,93	-0,37
20. 0. 5. 37,5			7. 57. 46,76	46,74	-0,02		4,38		69. 17. 52,12	51,02	-1,10
21. 0. 5. 41,1			8. 1. 46,93	46,75	-0,18		4,41		69. 29. 15,13	14,11	-1,02
22. 0. 5. 44,1			8. 5. 46,42	46,21	-0,21		4,43		69. 40. 59,19	58,01	-1,18
24. 0. 5. 48,2			8. 13. 43,64	43,44	-0,20		4,48		70. 5. 26,93	26,90	-0,03
25. 0. 5. 49,3			8. 17. 41,32	41,19	-0,13		4,51		70. 18. 12,66	11,39	-1,27
28. 0. 5. 49,1						S.	4,63	15. 46,49	70. 58. 24,00	22,08	-2,92
29. 0. 5. 47,9	II.	1. 6,85	8. 33. 26,17	26,15	-0,02		4,63		71. 12. 23,53	23,77	+0,24
Aug. 7. 0. 5. 9,1	I.	1. 6,07	9. 8. 16,25	16,09	-0,16		4,91		73. 31. 56,35	56,93	+0,58
10. 0. 4. 45,1							5,02		74. 23. 23,75	24,32	+0,57
11. 0. 4. 35,9						N.	5,02	15. 48,49	74. 41. 5,64	3,92	-1,72
14. 0. 4. 5,5	II.	1. 5,50	9. 34. 48,42	48,26	-0,16	S.	5,19	15. 48,99	75. 35. 29,65	29,71	+1,06
16. 0. 3. 42,5			9. 42. 18,39	18,30	-0,09		5,24		76. 12. 59,07	56,70	-2,36
18. 0. 3. 17,4	II.	1. 5,19	9. 49. 46,34	46,32	-0,02	S.	5,34	15. 49,69	76. 51. 13,18	16,69	+3,51
19. 0. 3. 4,1			9. 53. 29,64	29,60	-0,04		5,35		77. 10. 44,23	45,79	+1,56
23. 0. 2. 6,6			10. 8. 18,13	18,06	-0,07		5,51		78. 30. 41,82	41,98	+0,16
24. 0. 1. 51,0			10. 11. 59,10	59,06	-0,04		5,55		78. 51. 8,97	9,27	+0,30
25. 0. 1. 35,1			10. 15. 39,68	39,63	-0,05		5,58		79. 11. 46,93	47,17	+0,24
26. 0. 1. 18,7			10. 19. 19,75	19,78	+0,03		5,62		79. 32. 35,42	35,47	+0,05
28. 0. 0. 44,8			10. 26. 38,95	38,88	-0,07		5,71		80. 14. 37,86	41,36	+3,50
29. 0. 0. 27,4			10. 30. 17,96	17,85	-0,11		5,75		80. 35. 55,79	58,46	+2,67
30. 0. 0. 9,3			10. 33. 56,45	56,46	+0,01		5,79		80. 57. 24,85	24,36	-0,49
30. 23. 59. 51,1			10. 37. 34,72	34,72	0,00		5,83		81. 18. 58,54	58,86	+0,32
31. 23. 59. 32,7			10. 41. 12,83	12,64	-0,19						
Sept. 1. 23. 59. 14,0			10. 44. 50,63	50,24	-0,39		5,91		82. 2. 31,69	32,25	+0,56
3. 23. 58. 35,0			10. 52. 4,63	4,59	-0,04		5,99		82. 46. 36,64	36,15	-0,49
5. 23. 57. 55,2			10. 59. 17,87	17,91	+0,04		6,07		83. 31. 7,96	7,85	-0,11
7. 23. 57. 14,9			11. 6. 30,52	30,37	-0,15		6,15		84. 16. 4,31	5,04	+0,73
8. 23. 56. 54,3			11. 10. 6,40	6,34	-0,06		6,19		84. 38. 43,09	42,34	-0,75
10. 23. 56. 12,9			11. 17. 18,06	17,85	-0,21		6,27		85. 24. 13,13	13,14	+0,01
11. 23. 55. 52,1	II.	1. 4,03	11. 20. 53,68	53,44	-0,24		6,31		85. 47. 2,98	5,94	-2,96
12. 23. 55. 31,0			11. 24. 29,14	28,96	-0,18		6,35		86. 10. 2,00	3,44	+1,44
14. 23. 54. 48,8	II.	1. 3,99	11. 31. 39,95	39,83	-0,12		6,43		86. 56. 11,58	10,63	-0,95
15. 23. 54. 27,4			11. 35. 15,00	15,22	+0,22		6,47		87. 19. 18,42	19,73	+1,31
17. 23. 53. 45,4						S.	6,57	15. 56,88	88. 5. 50,74	47,43	-3,31
18. 23. 53. 24,4			11. 46. 1,48	1,47	-0,01	N.	6,56	15. 57,18	88. 29. 3,61	5,33	+1,72
20. 23. 52. 42,6	I.	1. 4,01	11. 53. 12,71	12,53	-0,18						
21. 23. 52. 21,6			11. 56. 48,18	48,17	-0,01	S.	6,72	15. 57,98	89. 39. 15,55	10,73	-4,82
24. 23. 51. 19,7			12. 7. 35,75	35,79	+0,04	N.	6,78	15. 58,78	90. 49. 25,98	26,13	+0,15
25. 23. 50. 59,5			12. 11. 12,05	11,94	-0,11		6,85		91. 12. 54,48	51,73	-2,75
26. 23. 50. 39,5			12. 14. 48,59	48,27	-0,32		6,84		91. 36. 17,17	17,03	-0,14
27. 23. 50. 19,3			12. 18. 24,87	24,79	-0,08		6,92		91. 59. 43,66	41,53	-2,13
28. 23. 49. 59,5			12. 22. 1,56	1,53	-0,03		6,96		92. 23. 7,73	4,93	-2,80
29. 23. 49. 40,0			12. 25. 38,56	38,49	-0,07		6,99		92. 46. 28,35	26,93	-1,42
Oct. 1. 23. 49. 1,8			12. 32. 53,37	53,19	-0,18		7,06		93. 33. 6,58	5,03	-1,55
2. 23. 48. 43,0			12. 36. 31,06	30,97	-0,09		7,10		93. 56. 21,33	20,53	-0,80
3. 23. 48. 24,6			12. 40. 9,12	9,07	-0,05						
4. 23. 48. 6,6			12. 43. 47,62	47,51	-0,11						
6. 23. 47. 31,6			12. 51. 5,69	5,52	-0,17						
9. 23. 46. 42,2			13. 2. 5,78	5,66	-0,12						
10. 23. 46. 26,7	I.	1. 4,87	13. 5. 46,82	46,64	-0,18						
11. 23. 46. 11,8			13. 9. 28,37	28,12	-0,25						
12. 23. 45. 57,2			13. 13. 10,32	10,12	-0,20						
16. 23. 45. 4,6			13. 28. 3,81	3,72	-0,09						
20. 23. 44. 22,1	II.	1. 5,71	13. 43. 7,35	7,06	-0,29		7,65		100. 41. 19,48	17,86	-1,62
22. 23. 44. 4,6			13. 50. 42,92	42,66	-0,26		7,70		101. 23. 52,24	49,67	-3,57
23. 23. 43. 56,7			13. 54. 31,62	31,48	-0,14		7,73		101. 44. 52,58	50,27	-2,31
25. 23. 43. 43,4			14. 2. 11,42	11,21	-0,21		7,77		102. 26. 21,70	18,58	-3,12

June 30. Probably an error of 1' in the counting.

Aug. 28. See the note to the Transit observation.



Greenwich Mean Solar Time of Transit of Centre.	Limb Observed.	Reduction to Transit of Centre.	R.A. of Centre from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Limb Observed.	Parallax.	Assumed Semi- diameter.	Geocentric N.P.D. of Centre from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		m. s.	h. m. s.	s.	s.		"	"	° ' "	"	"
Oct. 26. 23. 43. 37,9			14. 6. 2,38	2,15	- 0,23						
27. 23. 43. 33,6			14. 9. 54,61	53,82	+ 0,21						
29. 23. 43. 25,6			14. 17. 39,70	39,40	- 0,30						
30. 23. 43. 22,9			14. 21. 33,54	33,32	- 0,22						
31. 23. 43. 20,9			14. 25. 28,14	28,02	- 0,12						
Nov. 2. 23. 43. 19,6			14. 33. 19,92	19,79	- 0,13						
3. 23. 43. 20,1			14. 37. 16,99	16,89	- 0,10						
5. 23. 43. 23,7			14. 45. 13,75	13,56	- 0,19						
6. 23. 43. 26,6			14. 49. 13,24	13,15	- 0,09						
8. 23. 43. 35,2			14. 57. 14,97	14,89	- 0,08						
9. 23. 43. 40,9			15. 1. 17,16	17,04	- 0,12						
10. 23. 43. 47,7			15. 5. 20,58	20,07	- 0,51						
17. 23. 44. 56,6						S.	8,22	16. 12,57	109. 14. 17,39	13,18	- 4,21
26. 23. 47. 25,1			16. 12. 3,47	3,37	- 0,10		8,31		111. 8. 35,77	34,63	- 1,14
29. 23. 48. 27,8			16. 24. 56,00	55,90	- 0,10		8,34		111. 39. 41,91	42,35	+ 0,44
30. 23. 48. 50,0			16. 29. 14,86	14,72	- 0,14		8,34		111. 49. 17,38	15,66	- 1,72
Dec. 3. 23. 50. 0,2			16. 42. 14,89	14,92	+ 0,03		8,37		112. 15. 24,92	23,18	- 1,74
5. 23. 50. 50,0		1. 10,62	16. 50. 57,91	57,96	+ 0,05		8,38		112. 30. 40,83	39,29	- 1,54
6. 23. 51. 15,7			16. 55. 20,30	20,28	- 0,02		8,39		112. 37. 40,66	37,90	- 2,76
8. 23. 52. 8,7			17. 4. 6,51	6,44	- 0,07		8,39		112. 50. 16,21	15,31	- 0,90
10. 23. 53. 3,2			17. 12. 54,30	54,42	+ 0,12		8,40		113. 1. 7,00	4,82	- 2,18
11. 23. 53. 31,2			17. 17. 18,90	19,03	+ 0,13		8,41		113. 5. 49,31	48,63	- 0,68
13. 23. 54. 28,3						S.	8,42	16. 16,46	113. 13. 57,01	53,65	- 3,36
14. 23. 54. 57,3			17. 30. 34,92	34,96	+ 0,04		8,42		113. 17. 13,92	14,55	+ 0,63
15. 23. 55. 26,8			17. 35. 1,05	0,85	- 0,20		8,42		113. 20. 8,26	7,56	- 0,70
18. 23. 56. 55,6			17. 48. 19,81	19,80	- 0,01		8,42		113. 26. 0,99	57,88	- 3,11
22. 23. 58. 55,8			18. 6. 6,63	6,60	- 0,03		8,43		113. 27. 11,16	9,11	- 2,05
26. 0. 0. 26,1			18. 19. 26,85	26,46	- 0,39		8,43		113. 23. 5,14	4,74	- 0,40
27. 0. 0. 55,9			18. 23. 53,25	52,84	- 0,41		8,42		113. 20. 49,15	46,74	- 2,41
28. 0. 1. 25,4			18. 28. 19,36	19,04	- 0,32		8,42		113. 18. 1,29	0,55	- 0,74

Feb. 25, Apr. 8, and Dec. 6. The R.A. of centre from observation is inferred from the transits of the Limbs by applying the Reduction to transit of centre, and giving weights to the two results proportional to the respective number of wires.

On Feb. 16, Apr. 20, June 1, 24, 26, 30, Aug. 19, 23, Sept. 13, 16, 19, Oct. 28, Nov. 4, 11, Dec. 4, 23, and 27, there were no accompanying transits of clock-stars.

The Circle was out of use from Oct. 3 to Oct. 21, and from Oct. 26 to Nov. 17.

### RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MELPOMENE.

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Feb. 2. 11. 34. 52,8	7	8. 26. 33,86	37,49	+ 3,63	3,81	77. 9. 25,95	40,54	+ 14,59
3. 11. 29. 57,8	7	8. 25. 34,66	38,22	+ 3,56	3,79	77. 0. 52,03	3,43	+ 11,40
7. 11. 10. 26,6	7	8. 21. 46,50	49,87	+ 3,37	3,69	76. 26. 39,76	52,98	+ 13,22
9. 11. 0. 46,7	7	8. 19. 58,06	1,88	+ 3,82	3,64	76. 9. 51,02	4,27	+ 13,25
13. 10. 41. 42,9	11	8. 16. 37,34	40,67	+ 3,33				
28. 9. 33. 51,1	3	8. 7. 42,74	45,73	+ 2,99	3,12	73. 48. 7,27	17,92	+ 10,65
Mar. 3. 9. 21. 4,5					3,04	73. 29. 40,25	49,92	+ 9,67
6. 9. 8. 33,9	4	8. 6. 0,65	3,73	+ 3,08	2,95	73. 12. 25,70	35,64	+ 9,94
16. 8. 28. 51,8	4	8. 5. 37,64	40,73	+ 3,09	2,70	72. 23. 59,69	8,60	+ 8,91
17. 8. 25. 3,7	4	8. 5. 45,45	48,18	+ 2,73				
21. 8. 10. 6,8					2,58	72. 4. 56,56	4,42	+ 7,86
23. 8. 2. 48,3	9	8. 7. 5,67	8,22	+ 2,55				
24. 7. 59. 11,2	9	8. 7. 24,60	27,29	+ 2,69	2,52	71. 55. 5,46	14,97	+ 9,51
27. 7. 48. 29,9	4	8. 8. 31,15	33,93	+ 2,78	2,46	71. 46. 28,91	37,26	+ 8,35
29. 7. 41. 30,2	4	8. 9. 23,37	26,03	+ 2,66	2,39	71. 41. 23,87	31,44	+ 7,57



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EUTERPE.

Greenwich Mean Solar Time of Transit.	Number of wires.	R. A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Jan. 2. 8. 2. 28,0	5	2. 51. 20,95	21,22	+ 0,27	4,13	74. 36. 55,35	56,77	+ 1,42

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF URANIA.

July 28. 12. 38. 31,5	2	21. 4. 16,87	17,05	+ 0,18				
Aug. 1. 12. 18. 53,1					6,32	106. 49. 34,85	36,83	+ 1,98
15. 11. 9. 56,9	4	20. 46. 25,68	25,47	- 0,21	6,37	107. 29. 45,63	45,77	+ 0,14
17. 11. 0. 13,1					6,35	107. 34. 52,00	48,06	(- 3,94)
21. 10. 40. 56,6	2	20. 40. 59,99	0,41	+ 0,42				

Aug. 17. The recorded N.P.D. having been increased 2' conjecturally, it is doubtful whether the object bisected was the Planet.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF IRIS.

June 19. 11. 29. 18,0					4,82	112. 33. 20,60	15,43	- 5,17
28. 10. 44. 42,8	3	17. 11. 52,73	54,99	+ 2,26	4,78	112. 7. 53,94	50,50	- 3,44

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MASSILIA.

Mar. 6. 12. 59. 59,4	5	11. 58. 4,26	5,26	+ 1,00	5,24	90. 30. 8,31	11,89	+ 3,58
16. 12. 11. 39,8	5	11. 49. 2,18	3,28	+ 1,10	5,18	89. 28. 21,99	25,54	+ 3,55
17. 12. 6. 49,2	7	11. 48. 7,39	8,03	+ 0,64	5,16	89. 22. 2,07	5,41	+ 3,34
23. 11. 37. 47,9	11	11. 42. 40,67	41,62	+ 0,95	5,06	88. 44. 26,98	30,10	+ 3,12
24. 11. 32. 59,5					5,05	88. 38. 19,95	22,91	+ 2,96
28. 11. 13. 52,1	4	11. 38. 23,66	24,57	+ 0,91	4,97	88. 14. 35,64	40,37	+ 4,73
30. 11. 4. 23,8	10	11. 36. 46,88	47,93	+ 1,05	4,92	88. 3. 17,85	23,33	+ 5,48
31. 10. 59. 41,1	9	11. 35. 59,95	60,90	+ 0,95	4,89	87. 57. 44,94	53,02	+ 8,08
April 1. 10. 54. 59,7	11	11. 35. 14,34	15,16	+ 0,82	4,87	87. 52. 29,38	30,93	(+ 1,55)
3. 10. 45. 40,0					4,82	87. 42. 2,49	9,54	+ 7,05
5. 10. 36. 25,7	7	11. 32. 23,57	24,36	+ 0,79				
7. 10. 27. 16,6	4	11. 31. 6,00	6,91	+ 0,91	4,71	87. 22. 57,09	7,00	+ 9,91
10. 10. 13. 43,8	11	11. 29. 20,64	21,52	+ 0,88	4,63	87. 10. 18,21	26,01	+ 7,80
11. 10. 9. 16,0	9	11. 28. 48,69	49,37	+ 0,68	4,60	87. 6. 22,85	31,74	+ 8,89
13. 10. 0. 24,7	7	11. 27. 49,07	49,73	+ 0,66	4,54	86. 59. 6,73	13,26	+ 6,53
15. 9. 51. 39,6	9	11. 26. 55,61	56,40	+ 0,79				
18. 9. 38. 43,9	9	11. 25. 47,50	48,53	+ 1,03	4,39	86. 43. 51,69	58,15	+ 6,46
24. 9. 13. 38,0	3	11. 24. 16,76	17,43	+ 0,67	4,22	86. 31. 22,15	33,57	+ 11,42

April 1. The Circle observation may possibly apply to another object, the recorded N.P.D. having been diminished 4' conjecturally.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF HEBE.

Greenwich Mean Solar Time of Transit.				Number of wires.	R.A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				"	"	"		
April	10.13.	6.18,7		2	14.22.	23,94		22,14	-1,80	3,07	82.9.	13,35		11,74	-1,61
	15.12.	42.33,6		7	14.18.	17,72		16,15	-1,57	3,05	81.31.	53,58		52,87	-0,71
	18.12.	28.12,5		5	14.15.	43,86		42,39	-1,47						
	19.12.	23.25,0		8	14.14.	52,15		50,39	-1,76	3,03	81.4.	43,59		41,23	-2,36
May	2.11.	20.59,1		5	14.3.	31,20		29,82	(-1,38)						
	3.11.	16.13,0		3	14.2.	40,92		39,05	-1,87						
	4.11.	11.26,8		7	14.1.	50,47		48,78	-1,69						
	5.11.	6.41,2		11	14.1.	0,62		59,03	-1,59	2,91	79.47.	7,51		4,35	-3,16
	8.10.	52.29,4		5	13.58.	36,21		33,51	(-2,70)						
	9.10.	47.45,6		5	13.57.	48,17		46,38	-1,79	2,88	79.36.	42,92		39,68	-3,24

May 2. See the note to the observation.

May 8. Perhaps an error of 1<sup>s</sup> in the observation. But see the note.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF LUTETIA.

Feb.	7.13.	2.37,2		4	10.14.	15,44		14,02	-1,42	2,75	74.28.	14,62		2,05	-12,57
	23.11.	44.33,8		4	9.59.	4,12		2,73	-1,39						
	27.11.	25.5,5								2,62	72.39.	24,98		13,61	-11,37

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF FORTUNA.

Feb.	7.12.	32.51,4		9	9.44.	24,80		16,45	-8,35	3,63	78.53.	22,64		40,03	-42,61
	9.12.	23.2,0		4	9.42.	26,93		18,92	-8,01	3,61	78.42.	54,89		13,81	-41,08
	25.11.	5.6,7		4	9.27.	23,61		16,15	-7,46	3,40	77.20.	56,34		20,23	-36,11
	27.10.	55.35,3		5	9.25.	43,84		36,21	-7,63	3,37	77.11.	35,41		59,85	-35,56
	28.10.	50.51,7		3	9.24.	55,98		47,91	-8,07	3,35	77.7.	0,10		27,09	-33,01
Mar.	3.10.	36.45,7		4	9.22.	37,35		30,32	-7,03	3,30	76.53.	54,52		21,39	-33,13
	17.9.	33.53,2								3,02	76.5.	30,84		2,76	-28,08
	23.9.	8.31,8		10	9.12.	59,97		53,84	-6,13	2,90	75.51.	57,76		31,22	-26,54
	24.9.	4.24,1								2,88	75.50.	8,92		42,25	-26,67

Feb. 28. The time of transit at the wire was perhaps 1<sup>s</sup> too great.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF AMPHITRITE.

Mar.	16.13.	30.36,4		7	13.8.	11,73		11,63	-0,10	4,35	99.50.	25,31		27,00	+1,69
	23.12.	57.16,4		10	13.2.	22,18		22,35	+0,17	4,41	99.33.	39,69		41,80	+2,11
	28.12.	33.6,2		6	12.57.	50,75		50,95	+0,20	4,43	99.18.	39,76		41,58	+1,82
	30.12.	23.23,1		11	12.55.	59,14		59,24	+0,10	4,44	99.12.	4,05		7,57	+3,52
	31.12.	18.30,9		6	12.55.	2,74		2,97	+0,23	4,44	99.8.	44,23		44,56	+0,33
April	3.12.	3.54,1								4,43	98.58.	14,41		15,36	+0,95
	5.11.	54.9,4		11	12.50.	19,99		20,19	+0,20	4,43	98.51.	2,82		2,57	-0,25
	6.11.	49.17,2		10	12.49.	23,57		23,81	+0,24	4,42	98.47.	23,19		23,19	0,00
	7.11.	44.25,4		5	12.48.	27,53		27,63	+0,10	4,42	98.43.	37,89		42,30	+4,41
	8.11.	39.33,7		8	12.47.	31,59		31,71	+0,12	4,41	98.39.	59,37		0,19	+0,82
	10.11.	29.51,3		11	12.45.	40,65		40,93	+0,28	4,40	98.32.	30,89		33,82	+2,93



RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF AMPHITRITE *continued.*

Greenwich Mean Solar Time of Transit.	Number of wires.	R.A. from Observation.	Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.	Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d. h. m. s.		h. m. s.	s.	s.	"	° ' "	"	"
Apr. 11. 11. 25. 0,8	11	12. 44. 45,95	46,17	+ 0,22	4,39	98. 28. 48,64	50,18	+ 1,54
13. 11. 15. 21,4	10	12. 42. 58,04	58,22	+ 0,18	4,37	98. 21. 26,70	23,74	- 2,96
15. 11. 5. 44,4	9	12. 41. 12,62	12,72	+ 0,10	4,35	98. 14. 0,90	0,58	- 0,32
17. 10. 56. 10,1	11	12. 39. 29,80	30,08	+ 0,28	4,33	98. 6. 42,92	43,30	+ 0,38
18. 10. 51. 24,1	11	12. 38. 39,61	39,97	+ 0,36	4,32	98. 3. 5,14	7,62	+ 2,48
19. 10. 46. 39,2	11	12. 37. 50,47	50,73	+ 0,26	4,30	97. 59. 32,80	34,42	+ 1,62
May 2. 9. 46. 32,7	4	12. 28. 49,30	49,61	+ 0,31				
4. 9. 37. 37,1	5	12. 27. 45,32	45,54	+ 0,22	4,05	97. 14. 31,27	30,68	- 0,59
5. 9. 33. 11,4	7	12. 27. 15,42	15,62	+ 0,20	4,03	97. 12. 14,32	15,10	+ 0,78
10. 9. 11. 24,2	4	12. 25. 7,43	7,78	+ 0,35				
13. 8. 58. 37,6	5	12. 24. 8,57	8,75	+ 0,18				

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EGERIA.

Oct. 23. 11. 1. 52,6	8	1. 10. 22,33	25,69	+ 3,36	4,33	93. 45. 41,20	23,87	- 17,33
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## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF IRENE.

Jan. 2. 8. 54. 7,5	3	3. 43. 8,87	21,52	+ 12,65	2,70	73. 34. 24,42	7,22	- 77,20
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## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THALIA.

May 26. 10. 49. 38,0	3	15. 6. 42,28	46,15	(+ 3,87)	4,52	103. 34. 53,03	64,33	+ 11,30
27. 10. 44. 49,4					4,50	103. 35. 28,74	36,83	+ 8,09
31. 10. 25. 46,4	4	15. 2. 29,55	32,74	+ 3,19				

May 26. It is doubtful whether the object observed with the Transit was the Planet. See the note to the observation.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF EUNOMIA.

Mar. 16. 11. 56. 22,6	4	11. 33. 42,51	34,03	- 8,48	3,76	104. 16. 6,70	48,55	- 78,15
17. 11. 51. 33,3	5	11. 32. 48,97	40,10	- 8,87	3,76	104. 11. 58,44	40,71	- 77,73
23. 11. 22. 40,1	10	11. 27. 30,37	21,98	- 8,39	3,73	103. 44. 11,49	12,72	(- 58,77)
24. 11. 17. 52,7	7	11. 26. 38,73	30,37	- 8,36	3,65	103. 39. 16,42	14,43	(- 61,99)
28. 10. 58. 48,9	11	11. 23. 17,99	9,78	- 8,21				
29. 10. 54. 4,6	11	11. 22. 29,48	21,34	- 8,14	3,69	103. 13. 20,99	3,47	- 77,52
30. 10. 49. 21,4	10	11. 21. 42,01	33,73	- 8,28	3,68	103. 7. 55,86	36,23	- 79,63
31. 10. 44. 38,7	4	11. 20. 55,09	46,87	- 8,22				
Apr. 1. 10. 39. 56,8	8	11. 20. 8,95	0,91	- 8,04	3,66	102. 56. 43,45	31,29	- 72,16
10. 9. 58. 25,4	11	11. 13. 59,76	52,00	- 7,76	3,55	102. 5. 29,93	16,74	- 73,19
11. 9. 53. 54,2	10	11. 13. 24,34	16,51	- 7,83	3,54	101. 59. 48,07	34,17	- 73,90
12. 9. 49. 24,0	7	11. 12. 49,97	42,20	- 7,77	3,52	101. 54. 7,98	52,68	- 75,30
13. 9. 44. 55,1	7	11. 12. 16,89	9,12	- 7,77	3,51	101. 48. 30,36	12,54	- 77,82
15. 9. 36. 1,0	4	11. 11. 14,44	6,65	- 7,79	3,48	101. 37. 12,49	57,96	- 74,53
18. 9. 22. 49,1	3	11. 9. 50,01	42,56	- 7,45				
24. 8. 57. 0,7	3	11. 7. 36,74	29,76	- 6,98	3,34	100. 49. 4,22	51,12	- 73,10

March 23 and 24. It is possible that each of the observed N.P.D. is in error 1', or 20'',86.

April 24. The Tabular R.A. and N.P.D. may not be exact: see the Introduction.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF PROSERPINE.

Greenwich Mean Solar Time of Transit.				Number of wires.	R.A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				"	"	"		
Aug.	29.	12.	22.44,8							4,60	102.41.53,56			57,27	+ 3,71
	30.	12.	17.56,7							4,60	102.46.40,19			42,70	+ 2,51
	31.	12.	13.8,6							4,61	102.51.20,10			24,96	+ 4,86
Sept.	1.	12.	8.20,3	9	22.52.	0,12		0,68	+ 0,56	4,61	102.56.1,90			3,72	+ 1,82
	2.	12.	3.32,4	9	22.51.	7,99		8,18	+ 0,19	4,61	103.0.37,59			38,56	+ 0,97
	4.	11.	53.55,0	2	22.49.	22,14		23,27	+ 1,13	4,60	103.9.31,18			35,33	+ 4,15
	5.	11.	49.7,9	4	22.48.	30,76		31,00	+ 0,24						
	9.	11.	29.58,0	9	22.45.	3,95		4,43	+ 0,48	4,58	103.30.23,88			27,36	+ 3,48
	11.	11.	26.25,3	4	22.43.	22,79		23,50	+ 0,71	4,57	103.38.0,96			6,06	+ 5,10

Sept. 4. The Planet was apparently too faint for accurate observation.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF BELLONA.

Mar.	11.	12.	40.57,4	4	11.58.	41,88		41,53	- 0,35	3,95	81.24.55,56			43,92	- 11,64
	13.	12.	31.37,5	4	11.57.	13,57		12,75	- 0,82	3,93	81.6.48,69			32,74	- 15,95
	16.	12.	17.35,2	7	11.54.	58,58		57,81	- 0,77	3,89	80.40.8,68			54,34	- 14,34
	17.	12.	12.54,3							3,87	80.31.28,91			13,72	- 15,19
	23.	11.	44.50,7	11	11.49.	44,61		43,64	- 0,97	3,78	79.42.8,45			54,58	- 13,87
	24.	11.	40.11,1	7	11.49.	0,79		59,79	- 1,00	3,76	79.34.25,15			13,35	- 11,80
	28.	11.	21.37,8	6	11.46.	10,64		9,57	- 1,07	3,68	79.5.16,47			15,37	(- 1,10)
	29.	11.	17.0,7	9	11.45.	29,32		28,59	- 0,73	3,66	78.58.40,77			29,40	- 11,37
	30.	11.	12.24,7	5	11.44.	49,11		48,37	- 0,74	3,64	78.52.5,06			55,53	- 9,53
	31.	11.	7.49,5	2	11.44.	9,71		8,94	- 0,77	3,62	78.45.43,67			34,18	- 9,49
April	1.	11.	3.15,0	8	11.43.	30,97		30,37	- 0,60	3,60	78.39.32,91			25,35	- 7,56
	3.	10.	54.8,9							3,56	78.27.53,47			46,20	- 7,27
	5.	10.	45.7,0	3	11.41.	6,24		5,53	- 0,71	3,52	78.17.10,25			0,49	- 9,76
	6.	10.	40.37,3	5	11.40.	32,38		31,91	- 0,47	3,50	78.12.1,09			58,00	- 3,09
	7.	10.	36.9,0	2	11.39.	59,86		59,41	- 0,45	3,48	78.7.11,75			9,21	- 2,54
	11.	10.	18.26,9	6	11.38.	1,11		1,26	+ 0,15						
	13.	10.	9.43,7	4	11.37.	9,53		9,64	+ 0,11	3,35	77.43.7,39			7,20	- 0,19
	17.	9.	52.32,8	3	11.35.	42,03		42,22	+ 0,19						
	24.	9.	23.22,9							3,13	77.20.22,48			32,06	+ 9,58

March 28. The Circle observer probably bisected the fainter preceding object noticed by the Transit observer. See the note to the transit observation.

April 24. The identity of the object with the Planet is a little uncertain.

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF CALLIOPE.

Mar.	23.	12.	5.37,3	2	12.10.	34,61		38,31	+ 3,70	2,21	70.20.59,91			33,29	+ 33,38
	24.	12.	0.49,9							2,20	70.18.15,81			43,59	+ 27,78
	28.	11.	41.42,2	2	12.6.	18,37		21,78	+ 3,41	2,18	70.8.54,50			2,79	+ 28,29
	30.	11.	32.10,1	8	12.4.	37,72		41,36	+ 3,64	2,17	70.5.30,08			55,51	+ 25,43
	31.	11.	27.25,0	7	12.3.	48,39		51,83	+ 3,44	2,16	70.4.5,34			30,61	+ 25,27
April	5.	11.	3.47,1	2	11.59.	49,44		53,00	+ 3,56						
	6.	10.	59.5,8	2	11.59.	3,89		7,31	+ 3,42						
	10.	10.	40.28,1	3	11.56.	9,38		12,82	+ 3,44						
	11.	10.	35.50,7	3	11.55.	27,71		31,44	+ 3,73						
	15.	10.	17.32,0							2,07	70.7.57,91			4,37	+ 26,46

April 10. The R.A. by the observation has been diminished 10° conjecturally.



## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF HYGEIA.

Greenwich Mean Solar Time of Transit.				Number of wires.	R. A. from Observation.			Seconds of Tabular R.A.	Excess of Tabular R.A.	Parallax.	Geocentric N.P.D. from Observation.			Seconds of Tabular N.P.D.	Excess of Tabular N.P.D.
d.	h.	m.	s.		h.	m.	s.				°	'	"		
Feb.	2.	12.	25.30,8	11	9.	17.	20,22	45,05	+24,83	2,52	77.	0.	40,38	53,60	+133,22
	3.	12.	20.45,6	7	9.	16.	30,82	55,67	+24,85	2,52	76.	57.	59,43	7,40	+127,97
	7.	12.	1.44,0	7	9.	13.	12,29	37,18	+24,89	2,51	76.	46.	44,97	51,65	+126,68
	9.	11.	52.13,2	8	9.	11.	33,06	58,07	+25,01	2,51	76.	41.	3,83	10,31	+126,48
	13.	11.	33.14,6	4	9.	8.	17,50	42,18	+24,68	2,50	76.	29.	45,34	49,01	+123,67
	25.	10.	37.4,5	3	8.	59.	16,81	41,17	+24,36	2,43	75.	57.	49,82	47,54	+117,72
	28.	10.	23.19,6	11	8.	57.	19,37	43,44	+24,07	2,41	75.	50.	40,90	41,15	+120,25
Mar.	2.	10.	14.14,5	11	8.	56.	5,87	30,02	+24,15	2,39	75.	46.	16,05	13,33	+117,28
	3.	10.	9.44,2	4	8.	55.	31,38	54,94	+23,56	2,38	75.	44.	6,62	4,72	+118,10
	6.	9.	56.17,9	5	8.	53.	52,50	16,54	+24,04	2,36	75.	38.	3,83	1,58	+117,75
	16.	9.	12.53,8	7	8.	49.	46,90	9,41	+22,51	2,26	75.	22.	31,50	21,12	+109,62
	17.	9.	8.40,5	5	8.	49.	29,43	51,93	+22,50						
	23.	8.	43.49,8	10	8.	48.	13,90	35,91	+22,01	2,19	75.	16.	4,30	52,14	+107,84
	24.	8.	39.46,0	6	8.	48.	5,98	28,09	+22,11	2,18	75.	15.	28,65	15,68	+107,03
	27.	8.	27.43,5	10	8.	47.	51,19	13,01	+21,82	2,15	75.	14.	11,19	55,53	+104,34
	28.	8.	23.45,5	4	8.	47.	49,15	10,78	+21,63						

## RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF NEPTUNE.

Aug.	28.	12.	37.42,6							0,25	96.	56.	47,67	42,16	-5,51
	29.	12.	33.40,7	7	23.	5.	35,08	35,37	+0,29	0,25	96.	57.	22,82	20,64	-2,18
	30.	12.	29.38,7	7	23.	5.	28,92	29,34	+0,42	0,25	96.	58.	2,78	59,23	-3,55
	31.	12.	25.36,9	7	23.	5.	23,01	23,31	+0,30	0,25	96.	58.	40,43	37,82	-2,61
Sept.	1.	12.	21.35,1	7	23.	5.	17,16	17,25	+0,09	0,25	96.	59.	21,11	16,51	-4,60
	2.	12.	17.32,9	7	23.	5.	10,84	11,17	+0,33	0,25	96.	59.	59,50	55,21	-4,29
	4.	12.	9.29,0	7	23.	4.	58,69	59,01	+0,32	0,25	97.	1.	16,78	12,69	-4,09
	5.	12.	5.27,1	7	23.	4.	52,69	52,91	+0,22	0,25	97.	1.	56,05	51,49	-4,56
	6.	12.	1.24,8	7	23.	4.	46,32	46,81	+0,49	0,25	97.	2.	33,27	30,29	-2,98
	9.	11.	49.19,0	7	23.	4.	28,20	28,48	+0,28	0,25	97.	4.	29,40	26,33	-3,07
	11.	11.	41.14,9	7	23.	4.	15,86	16,28	+0,42	0,25	97.	5.	45,56	43,47	-2,09
	20.	11.	4.57,8	5	23.	3.	21,76	22,05	+0,29						
	21.	11.	0.55,4	3	23.	3.	15,22	16,14	(+0,92)	0,25	97.	11.	58,92	0,34	(+1,42)
	25.	10.	44.49,3	7	23.	2.	52,70	52,87	+0,18	0,25	97.	14.	30,93	24,90	-6,03
	26.	10.	40.47,5	7	23.	2.	46,79	47,15	+0,36	0,25	97.	15.	4,66	0,35	-4,31
	27.	10.	36.46,0	7	23.	2.	41,15	41,48	+0,33	0,25	97.	15.	38,28	35,43	-2,85
	28.	10.	32.44,6	7	23.	2.	35,68	35,86	+0,18	0,25	97.	16.	15,32	10,19	-5,13
	29.	10.	28.43,0	7	23.	2.	29,97	30,28	+0,31						
	30.	10.	24.41,5	7	23.	2.	24,39	24,75	+0,36	0,25	97.	17.	24,78	18,74	-6,04
Oct.	2.	10.	16.38,8	7	23.	2.	13,49	13,86	+0,37	0,25	97.	18.	28,30	25,82	-2,48
	3.	10.	12.37,6	7	23.	2.	8,17	8,50	+0,33	0,25	97.	19.	0,43	58,70	-1,73
	11.	9.	40.30,0	7	23.	1.	27,73	27,91	+0,18						
	12.	9.	36.29,2	7	23.	1.	22,82	23,16	+0,34						
	23.	8.	52.27,7	7	23.	0.	36,14	36,36	+0,22	0,25	97.	28.	20,83	14,47	-6,36
	26.	8.	40.29,1	7	23.	0.	25,29	25,56	+0,27						
	30.	8.	24.32,5	5	23.	0.	12,27	12,59	+0,32						
Nov.	3.	8.	8.37,8	5	23.	0.	1,11	1,34	+0,23						
	6.	7.	56.42,3	3	22.	59.	53,36	54,05	(+0,69)						
	9.	7.	44.48,9	4	22.	59.	47,71	47,83	+0,12						
	15.	7.	21.4,2	7	22.	59.	38,43	38,59	+0,16						
	22.	6.	53.27,7	6	22.	59.	33,26	33,41	+0,15	0,25	97.	34.	5,41	0,78	-4,63
	24.	6.	45.35,5	5	22.	59.	32,91	33,07	+0,16	0,25	97.	34.	6,08	59,53	-6,55
Dec.	7.	5.	54.38,5	7	22.	59.	43,18	43,37	+0,19	0,25	97.	32.	37,98	33,63	-4,35

Sept. 21. The Planet appears to have been too much obscured by cloud for accurate observation.

Nov. 6. The observation was taken under very unfavorable circumstances.



DETERMINATION OF THE POSITION OF THE ECLIPTIC, AND OF THE MEAN ERROR OF THE ASSUMED RIGHT ASCENSIONS, OF THE FUNDAMENTAL STARS, FROM THE TRANSIT AND CIRCLE OBSERVATIONS OF THE SUN IN THE YEAR 1854.

The total number of Circle Observations of the Sun, inclusive of 18 observations of single Limbs (that of April 17 being rejected), is 129. These are divisible into four groups containing respectively  $30\frac{1}{2}$ ,  $29\frac{1}{2}$ ,  $30\frac{1}{2}$  and  $29\frac{1}{2}$  observations, an observation of a single Limb being reckoned half an observation. Each of these groups is subdivided into three groups, as exhibited in the subjoined Table, which also contains the limiting days and the mean day of each group, the mean value ( $\alpha$ ) of the Tabular Errors in North Polar Distance, derived from pages 362—364, (half-weight being given to the errors from observations of single Limbs,) and the Sun's Longitude ( $\lambda$ ) and North Polar Distance ( $\Delta$ ) at the mean noon of the mean day.

Limiting Days of Observation of each group.	Mean Day.	Mean of the Tabular Errors in N.P.D.	Number of Observations.	Sun's Longitude at mean Noon of mean Day.	Sun's N.P.D. at mean Noon of mean Day.
		"		" " "	" " "
Jan. 2.....Feb. 6	Jan. 24	+ 0,26	10	304.14.51	109.12.45
Feb. 9.....Feb. 27	Feb. 19	+ 0,33	10	330.34.13	101.16.49
Feb. 28.....Apr. 3	Mar. 17	+ 1,31	$10\frac{1}{2}$	356.35.36	91.21.20
Apr. 4.....Apr. 18	Apr. 9	+ 2,72	10	19.18.24	82.26.12
Apr. 20.....May 26	May 12	+ 0,60	10	51.23.31	71.52.30
May 30.....July 19	June 25	- 0,54	$9\frac{1}{2}$	93.31.58	66.35.15
July 20.....Aug. 16	Aug. 1	- 0,70	$10\frac{1}{2}$	128.50.49	71.56.15
Aug. 18.....Aug. 31	Aug. 25	+ 1,06	$9\frac{1}{2}$	151.54.39	79.11.46
Sept. 2.....Sept. 18	Sept. 10	- 0,27	$10\frac{1}{2}$	167.25.1	85.1.28
Sept. 19.....Oct. 23	Oct. 1	- 1,74	$10\frac{1}{2}$	187.58.26	93.9.57
Oct. 24.....Dec. 9	Nov. 24	- 1,78	$9\frac{1}{2}$	241.55.56	110.33.58
Dec. 11.....Dec. 28	Dec. 19	- 1,40	$9\frac{1}{2}$	267.19.32	113.25.58

*Formula of Calculation.*

$$\alpha + m \cos \lambda \operatorname{cosec} \Delta + n \sin \lambda \operatorname{cosec} \Delta + p = 0.$$

The following equations were formed according to this formula by means of the above data, each equation being multiplied by the respective number of observations.

$$\begin{aligned}
 \text{First Quarter} & \begin{cases} + 2,61 + m \times 5,9596 - n \times 8,7537 + 10p = 0. \\ + 3,30 + m \times 8,8812 - n \times 5,0103 + 10p = 0. \\ + 13,74 + m \times 10,4844 - n \times 0,6241 + 10,5p = 0. \end{cases} \\
 \text{Second Quarter} & \begin{cases} + 27,20 + m \times 9,5205 + n \times 3,3353 + 10p = 0. \\ + 5,99 + m \times 6,5657 + n \times 8,2223 + 10p = 0. \\ - 5,14 - m \times 0,6379 + n \times 10,3326 + 9,5p = 0. \end{cases} \\
 \text{Third Quarter} & \begin{cases} - 7,36 - m \times 6,9274 + n \times 8,6016 + 10,5p = 0. \\ + 10,06 - m \times 8,5323 + n \times 4,5537 + 9,5p = 0. \\ - 2,86 - m \times 10,2866 + n \times 2,2961 + 10,5p = 0. \end{cases} \\
 \text{Fourth Quarter} & \begin{cases} - 18,25 - m \times 10,4144 - n \times 1,4588 + 10,5p = 0. \\ - 16,89 - m \times 4,7742 - n \times 8,9533 + 9,5p = 0. \\ - 13,32 - m \times 0,4831 - n \times 10,3426 + 9,5p = 0. \end{cases}
 \end{aligned}$$

The above equations give the following by adding and subtracting as here indicated:

$$\text{First Quarter} + \text{Second} + \text{Third} + \text{Fourth} \dots - 0'',92 - m \times 0,6445 + n \times 2,1988 + 120p = 0.$$

$$\text{First Quarter} + \text{Second} - \text{Third} - \text{Fourth} \dots + 96'',32 + m \times 82,1915 + n \times 12,8054 = 0.$$

$$\text{First Quarter} - \text{Second} - \text{Third} + \text{Fourth} \dots - 56'',70 + m \times 19,9515 - n \times 72,4844 = 0.$$

The solution of which gives,

$$m = - 1'',007,$$

$$n = - 1'',059,$$

$$p = + 0'',022.$$



Let  $\delta\lambda$  = the mean excess for the year of the Tabular Longitude of the Sun above the true Longitude.

$\delta R$  = the mean excess for the year of the Tabular R.A. above the true R.A.

$\delta\Delta$  = the mean excess for the year of the Tabular N.P.D. above the true N.P.D.

$\delta I$  = the excess of the Obliquity ( $I$ ) assumed in the Tables above the true Obliquity.

$A = -0^s,144$ , which is the mean of the 148 apparent excesses of the Tabular R.A. in pages 362—364, (that of June 30, being supposed to be  $1^s$  in error), an observation of a single Limb being reckoned of half-weight.

$D = -0'',008$ , which is the mean of the 149 apparent excesses of Tabular N.P.D. used in forming the above equations, an observation of a single Limb being reckoned of half-weight.

$q$  = the mean excess of the assumed R.A. of the fundamental stars above the true R.A.

$p$  = the mean excess within the Tropics of the N.P.D. determined by the reduction of the Circle observations of 1854, above the true N.P.D.

Then,  $\delta\lambda = m \operatorname{cosec} I = -1'',007 \times \operatorname{cosec} 23^\circ.27',5 = -2'',529$ .

$$\delta R = \frac{\delta\lambda}{15} = -0^s,169.$$

$$\delta\Delta = (\text{Tabular N.P.D.} - \text{Observed N.P.D.}) + (\text{Observed N.P.D.} - \text{True N.P.D.})$$

$$= D + p = -0'',008 + 0'',022 = +0'',014.$$

$$\delta I = n \sec I = -1'',059 \times \sec 23^\circ.27',5 = -1'',155.$$

$$q = (\text{Tabular R.A.} - \text{True R.A.}) - (\text{Tabular R.A.} - \text{Observed R.A.})$$

$$= \delta R - A = -0^s,169 + 0^s,144 = -0^s,025.$$

Hence the assumed R.A. of the Fundamental Stars are too small by the mean quantity  $0^s,025$ .







OCCULTATIONS  
OF  
FIXED STARS, AND THE PLANET MARS,  
BY THE MOON,  
WITH  
THE EQUATIONS GIVEN BY THE CALCULATION  
OF THE OCCULTATIONS.

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1854.



COMPARISONS OF CHRONOMETERS WITH THE TRANSIT CLOCK, USED IN THE  
CALCULATION OF THE FOLLOWING OCCULTATIONS.

\*\* The letter *H* is an abbreviation for Hardy, the Transit Clock; *G* for Graham, the Clock generally used with the Five-feet Equatorial; and *U* and *X* are Sidereal Chronometers each beating half-seconds.

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.	Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.
1854.		<i>h.</i> <i>m.</i> <i>s.</i>		<i>h.</i> <i>m.</i> <i>s.</i>	1854.		<i>h.</i> <i>m.</i> <i>s.</i>		<i>h.</i> <i>m.</i> <i>s.</i>
Jan. 30	H.	2.37.38,0	U.	2.40.18,9	Mar. 12	H.	15.9.22,0	X.	15.16.11,9
...	H.	2.38.15,0	U.	2.40.56,0	...	H.	15.4.3,0	U.	15.6.33,5
Feb. 7	H.	10.19.19,0	X.	10.22.51,4	Apr. 4	H.	13.28.58,0	X.	13.35.54,7
...	H.	10.19.52,0	X.	10.23.24,5	...	H.	13.41.13,0	U.	13.38.0,3
9	H.	6.45.18,0	X.	6.48.59,6	...	H.	13.41.32,0	U.	13.38.19,2
...	H.	6.48.25,0	X.	6.52.6,7	...	H.	14.4.53,0	X.	14.11.49,8
...	H.	6.43.14,0	U.	6.43.15,3	...	H.	14.5.34,0	X.	14.12.30,9
...	H.	7.57.58,0	X.	8.1.40,5	May 9	H.	15.21.59,0	X.	15.32.7,7
...	H.	8.3.44,0	U.	8.3.44,7	...	H.	16.31.7,0	X.	16.41.15,6
...	H.	8.4.4,0	U.	8.4.4,8	Sept. 4	H.	22.14.18,0	X.	22.16.57,4
Mar. 12	H.	8.32.29,0	X.	8.39.17,4	...	H.	22.14.49,0	X.	22.17.28,3
...	H.	8.35.6,0	U.	8.37.39,2	...	G.	22.13.8,0	U.	22.14.0,0
...	H.	11.54.9,0	X.	12.0.57,8	...	H.	22.16.41,0	U.	22.19.0,0
...	H.	11.51.8,0	U.	11.53.39,7	...	H.	23.19.48,0	X.	23.22.27,9
...	H.	14.39.3,0	X.	14.45.52,6	...	G.	23.16.6,9	U.	23.17.0,0
...	H.	14.39.40,0	X.	14.46.29,5	...	G.	23.17.7,1	U.	23.18.0,0
...	H.	14.34.12,0	U.	14.36.42,8					



Day of Observation 1854.	Phænomenon.	Moon's Limb.	Chronom. or Clock.	Instrument.	Time by Chronometer or Clock.	Sidereal Time.	Greenwich Mean Solar Time.	Observer.
					<i>h. m. s.</i>	<i>h. m. s.</i>	<i>h. m. s.</i>	
Jan. 30	(a) Disappear <sup>e</sup> . of B. (w.) xxii. 935.	Dark	U.	Northumb. Equat.	2.30.13,8	2.28.47,30	5.49.52,54	B.
Feb. 7	(b) Disappearance of 121 Tauri.	Dark	X.	46-inch Dollond	10.20.33,4	10.17.30,16	13.5.51,34	B.
9	(c) Disappearance of 52 Geminorum.	Dark	X.	Northumb. Equat.	6.44.1,3	6.40.52,16	9.21.57,01	B.
			U.	5-feet Equatorial	6.40.21,0	6.40.52,21	9.21.57,06	T.
...	(d) Reappearance of 52 Geminorum.	Bright	X.	Northumb. Equat.	7.59.31,8	7.56.21,90	10.37.14,38	B.
			U.	5-feet Equatorial	7.56.0,0	7.56.31,85		T.
Mar. 12	(e) Disappearance of 42 Leonis.	Dark	X.	Northumb. Equat.	7.32.8,5	7.26.51,55	8.5.55,71	B.
...	(f) Reappearance of 42 Leonis.	Bright	X.	Northumb. Equat.	8.34.42,0	8.29.25,03	9.8.18,94	B.
			U.	5-feet Equatorial	8.30.30,0	8.29.28,23	9.8.22,15	T.
...	(g) Disappearance of B.A.C. 3579.	Dark	X.	Northumb. Equat.	11.54.59,4	11.49.42,30	12.28.3,40	B.
			U.	5-feet Equatorial	11.50.42,0	11.49.42,00	12.28.3,10	T.
...	(h) First immersion of Mars.	Dark	X.	Northumb. Equat.	14.37.15,0	14.31.57,37	15.9.51,89	B.
			U.	5-feet Equatorial	14.32.54,5	14.31.55,62	15.9.50,14	T.
...	(i) Total disappearance of Mars.	Dark	X.	Northumb. Equat.	14.38.12,8	14.32.55,17	15.10.49,53	B.
			U.	5-feet Equatorial	14.33.52,7	14.32.53,82	15.10.48,18	T.
...	(k) First appearance of Mars.	Bright	X.	Northumb. Equat.	15.4.32,0	14.59.14,05	15.37.4,10	B.
			U.	5-feet Equatorial	15.0.14,5	14.59.12,15	15.37.2,20	T.
...	(l) Total emersion of Mars.	Bright	X.	Northumb. Equat.	15.5.25,8	15.0.7,85	15.37.57,76	B.
			U.	5-feet Equatorial	15.1.6,0	15.0.7,45	15.37.57,36	T.
April 4	(m) Disappearance of ε Geminorum.	Dark	X.	Northumb. Equat.	13.46.49,0	13.40.4,94	12.47.42,10	B.
			U.	46-inch Dollond	13.36.28,7	13.39.54,14	12.47.31,33	T.
...	(n) Reappearance of ε Geminorum.	Bright	X.	Northumb. Equat.	14.3.49,5	13.57.5,38	13.4.39,75	B.
			U.	46-inch Dollond	13.53.43,0	13.57.8,51		T.
May 9	(o) Disappearance of 48 Virginis.	Dark	X.	Northumb. Equat.	15.28.28,3	15.19.20,90	12.9.5,00	B.
...	(p) Reappearance of 48 Virginis.	Bright	X.	Northumb. Equat.	16.33.3,1	16.23.55,87	13.13.29,38	B.
Sept. 4	(q) Disappearance of 35 Capricorni.	Dark	X.	Northumb. Equat.	22.8.32,2	22.6.37,38	11.11.17,25	B.
			G.	5-feet Equatorial	22.7.19,3	22.6.36,88	11.11.16,75	C.
...	(r) Reappearance of 35 Capricorni.	Bright	X.	Northumb. Equat.	23.15.6,5	23.13.11,25	12.17.40,21	B.
30	(s) Disappearance of ω Sagittarii.	Dark	H.	46-inch Dollond	18.54.13,6	18.54.33,39	6.17.31,12	B.
...	(t) Disappearance of ω Sagittarii.	Bright	H.	46-inch Dollond	20.8.19,5	20.8.39,36	7.31.24,95	B.
...	(u) Disappearance of A Sagittarii.	Dark	H.	46-inch Dollond	20.31.32,7	20.31.52,58	7.54.34,37	B.

(a) The approach of the occultation was seen casually, the Moon's dark Limb being distinctly visible by the earth-light. The noted time was considered very accurate. The star was judged to be of Mag. 7, and was identified subsequently: its assumed place was obtained from Weisse's Catalogue. (b) 'Extremely exact.' (c) Both considered very exact. B's counting was one half-second short on looking at the Chronometer. Correction applied accordingly. The wind was high. (d) The Moon's Limb waved and the star was blazing. B's observation was satisfactory. At the time noted by T the star was separated from the Limb, the right place not having been looked at. (e) 'Very exact.' In the calculation of the sidereal time H - X is corrected by +0<sup>s</sup>.1 for change of relative rate in the interval from the observation to the comparison. (f) At both the recorded times the star was observed to be separated from the Limb. (g) The star was very faint in the 5-feet Telescope, but both times were considered exact. At the reappearance the star was too faint to be seen immediately: T recorded 13<sup>h</sup>.0<sup>m</sup>.4<sup>s</sup>.0 by U, but doubtfully. (h) and (i) 'Both times with the greatest exactness. Shortly before the total disappearance, the Planet became very faint, and decreased to the least glimmer imaginable. No distortion of the disk.' (B.) 'Beautifully exact, especially the total disappearance. The occultation took place at the Moon's S. Limb, which was nearly full.' (T.) (k) and (l) The four times were all considered very good. Both the disappearance and the reappearance were observed by B with a power of 280, and by T with a power of 120. (m) B looked for an instant at his chronometer just at the time of disappearance: possibly also a mistake was made in recording. T considered his time to be 'exact.' (n) 'The star was seen at the first glimmer of light, although it did not entirely separate from the Limb for ten seconds.' (B.) 'Not good: the Moon low and trees in the way.' T. (o) 'Very exact.' (p) No remark. (q) 'Not 0<sup>s</sup>.1 in error, I think.' (B.) 'Pretty good.' (C.) (r) B's observation was satisfactory. C did not see the star till it was some distance from the Limb, the Moon being nearly full. (s) 'Exact.' (t) 'May be a second too late: the star very faint.' (u) The star was occasionally very faint from haze, but the instant of disappearance was not doubtful.



Disappearance of B. (w.) XXII. 935, Jan. 30,  $5^h.49^m.52^s.54 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$37.11.49,50 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$341.37.40,80 + 0,5599 \times (t + \tau) + x''$
Moon's Geocentric North Polar Distance.....	$103.15.51,35 - 0,2231 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59.4,83 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter .....	$16.7,89 \times (1 + 0,001m)$
Star's Right Ascension in arc .....	$341.16.16,20 + e''$
Star's N.P.D. ....	$103.52.37,41 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$
Moon's apparent Right Ascension in arc .....	$341.6.45,16 + \delta R$
Moon's apparent N.P.D. ....	$104.5.53,70 + \delta \lambda$
Moon's apparent Semidiameter.....	$16.10,38 + \delta S$
Apparent Distance of Star from Moon's centre	$16.10,11 + \delta D$

$$\delta R = +0,4723t + 0,5638\tau + 1,0061x - 0,0021y - 1,8670m - 0,0116v$$

$$\delta \lambda = -0,2546t - 0,2224\tau + 0,0021x + 1,0025y + 3,0079m - 0,0084v$$

$$\delta S = -0,0006t + 0,9704n$$

$$\delta D = -0,5543\delta R + 0,5543e + 0,8206\delta \lambda - 0,8210f.$$

Final Equation:

$$+0'',27 = -0,5559x + 0,8238y + 0,5543e - 0,8210f - 0,4701t - 0,4950\tau - 0,0005v + 3,5032m - 0,9704n.$$

Disappearance of 121 Tauri, Feb. 7,  $13^h.5^m.51^s.34 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$154.22.32,40 + 15,0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$81.56.58,35 + 0,5359 \times (t + \tau) + x''$
Moon's Geocentric North Polar Distance .....	$65.27.7,10 - 0,0694 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54.7,20 \times [9,9990916] \times (1 + 0,001m)$
Moon's Geocentric Semidiameter.....	$14.46,60 \times (1 + 0,001m)$
Star's Right Ascension in arc.....	$81.38.6,30 + e''$
Star's N.P.D. ....	$66.3.38,90 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20,37 + v$
Moon's apparent Right Ascension in arc.....	$81.22.2,20 + \delta R$
Moon's apparent N.P.D.....	$66.2.0,65 + \delta \lambda$
Moon's apparent Semidiameter.....	$14.53,49 + \delta S$
Apparent Distance of Star from Moon's centre	$14.46,53 + \delta D$

$$\delta R = +0,4904t + 0,5373\tau + 1,0031x + 0,0047y - 2,1028m - 0,0131v$$

$$\delta \lambda = -0,0150t - 0,0719\tau - 0,0038x + 1,0077y + 2,1137m - 0,0104v$$

$$\delta S = -0,0006t + 0,8935n$$

$$\delta D = -0,9083\delta R + 0,9083e - 0,1099\delta \lambda + 0,1118f.$$

Final Equation:

$$+6'',96 = -0,9107x - 0,1150y + 0,9083e + 0,1118f - 0,4432t - 0,4801\tau + 0,0130v + 1,6776m - 0,8935n.$$



Disappearance of 52 Geminorum, Feb. 9,  $9^h.21^m.57^s.04 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$100.13.28.85 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$106.8.28.20 + 0.5527 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$64.19.49.12 + 0.0202 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54.21.14 \times [9.9990916] \times (1 + 0.001 m)$
Moon's Geocentric Semidiameter.....	$14.50.36 \times (1 + 0.001 n)$
Star's Right Ascension in arc .....	$106.26.38.25 + e$
Star's N.P.D.....	$64.51.59.10 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc.....	$106.12.19.95 + \delta R$
Moon's apparent N.P.D.....	$64.44.19.30 + \delta \lambda$
Moon's apparent Semidiameter .....	$15.3.06 + \delta S$
Apparent Distance of Star from Moon's centre	$15.2.53 + \delta D$

$$\delta R = +0.3958t + 0.5587\tau + 1.0108x - 0.0006y + 0.2343m + 0.0015v$$

$$\delta \lambda = +0.0142t + 0.0207\tau + 0.0004x + 1.0142y + 1.4912m - 0.0143v$$

$$\delta S = +0.0001t + 0.9031n$$

$$\delta D = -0.7786\delta R + 0.7786e - 0.5087\delta \lambda + 0.5102f.$$

Final Equation :

$$+0''.53 = -0.7873x - 0.5515y + 0.7786e + 0.5102f - 0.3155t - 0.4456\tau + 0.0061v + 0.9410m - 0.9031n.$$

Reappearance of 52 Geminorum, Feb. 9,  $10^h.37^m.14^s.38 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$119.5.28.50 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc.....	$106.50.5.10 + 0.5528 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$64.21.26.37 + 0.0228 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54.21.87 \times [9.9990916] \times (1 + 0.001 m)$
Moon's Geocentric Semidiameter.....	$14.50.57 \times (1 + 0.001 n)$
Star's Right Ascension in arc .....	$106.26.38.25 + e$
Star's N.P.D.....	$64.51.59.10 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc.....	$106.42.8.49 + \delta R$
Moon's apparent N.P.D.....	$64.46.13.55 + \delta \lambda$
Moon's apparent Semidiameter.....	$15.3.13 + \delta S$
Apparent Distance of Star from Moon's centre	$15.9.99 + \delta D$

$$\delta R = +0.3988t + 0.5587\tau + 1.0106x + 0.0011y - 0.4817m - 0.0030v$$

$$\delta \lambda = +0.0362t + 0.0227\tau - 0.0009x + 1.0141y + 1.5083m - 0.0142v$$

$$\delta S = -0.0001t + 0.9031n$$

$$\delta D = +0.8372\delta R - 0.8372e - 0.3788\delta \lambda + 0.3806f.$$

Final Equation :

$$-6''.86 = +0.8464x - 0.3832y - 0.8372e + 0.3806f + 0.3202t + 0.4591\tau + 0.0029v - 0.9747m - 0.9031n.$$



Disappearance of 42 Leonis, March 12, 8<sup>h</sup>. 55<sup>m</sup>. 55<sup>s</sup>. 71 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	111. 42. 53,25 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	152. 57. 33,75 + 0,5177 $\times (t + \tau)$ + $x''$
Moon's Geocentric North Polar Distance .....	73. 29. 7,20 + 0,1845 $\times (t + \tau)$ + $y$
Moon's Horizontal Parallax at the Observatory	55. 57,80 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15. 16,76 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	153. 29. 58,05 + $e''$
Star's N.P.D. ....	74. 17. 24,30 + $f$
Geocentric Colatitude of the Observatory .....	37. 58. 20,37 + $\nu$
Moon's apparent Right Ascension in arc .....	153. 21. 22,56 + $\delta R$
Moon's apparent N.P.D. ....	74. 4. 23,10 + $\delta \lambda$
Moon's apparent Semidiameter .....	15. 26,74 + $\delta S$
Apparent Distance of Star from Moon's centre	15. 25,34 + $\delta D$

$$\delta R = +0,4033t + 0,5214\tau + 1,0079x - 0,0021y + 1,4401m + 0,0090\nu$$

$$\delta \lambda = +0,1597t + 0,1874\tau + 0,0018x + 1,0108y + 2,1402m - 0,0124\nu$$

$$\delta S = +0,0004t + 0,9267n$$

$$\delta D = -0,5157\delta R + 0,5157e - 0,8441\delta \lambda + 0,8444f.$$

Final Equation:

$$+1'',40 = -0,5213x - 0,8521y + 0,5157e + 0,8444f - 0,3432t - 0,4271\tau + 0,0058\nu - 2,5491m - 0,9267n.$$

Reappearance of 42 Leonis, March 12, 9<sup>h</sup>. 8<sup>m</sup>. 18<sup>s</sup>. 94 +  $t^s$  +  $\tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	127. 21. 15,45 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc ...	153. 29. 50,55 + 0,5172 $\times (t + \tau)$ + $x''$
Moon's Geocentric North Polar Distance .....	73. 40. 40,54 + 0,1860 $\times (t + \tau)$ + $y$
Moon's Horizontal Parallax at the Observatory	55. 59,29 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15. 17,17 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	153. 29. 58,05 + $e''$
Star's N.P.D. ....	74. 17. 24,30 + $f$
Geocentric Colatitude of the Observatory .....	37. 58. 20,37 + $\nu$
Moon's apparent Right Ascension in arc .....	153. 45. 46,41 + $\delta R$
Moon's apparent N.P.D. ....	74. 14. 41,65 + $\delta \lambda$
Moon's apparent Semidiameter .....	15. 28,46 + $\delta S$
Apparent Distance of Star from Moon's centre	15. 27,21 + $\delta D$

$$\delta R = +0,3801t + 0,5218\tau + 1,0094x - 0,0014y + 0,9649m + 0,0060\nu$$

$$\delta \lambda = +0,1705t + 0,1889\tau + 0,0012x + 1,0123y + 2,0667m - 0,0129\nu$$

$$\delta S = +0,0003t + 0,9285n$$

$$\delta D = +0,9476\delta R - 0,9476e - 0,1748\delta \lambda + 0,1760f.$$

Final Equation:

$$+1'',25 = +0,9563x - 0,1783y - 0,9476e + 0,1760f + 0,3301t + 0,4614\tau + 0,0079\nu + 0,5531m - 0,9285n.$$



Disappearance of B.A.C. 3579, March 12, 12<sup>h</sup>. 28<sup>m</sup>. 3<sup>s</sup>. 25 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	177°. 25'. 32". 25 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	155°. 12'. 58,80 + 0,5155 $\times (t + \tau) + x''$
Moon's Geocentric North Polar Distance .....	74°. 18'. 17,97 + 0,1907 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	56°. 4,07 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15°. 18,49 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	155°. 15'. 16,50 + $e''$
Star's N.P.D. ....	74°. 54'. 48,60 + $f$
Geocentric Colatitude of the Observatory .....	37°. 58'. 20,37 + $\nu$
Moon's apparent Right Ascension in arc.....	154°. 59'. 19,97 + $\delta R$
Moon's apparent N.P.D. ....	74°. 52'. 34,11 + $\delta \lambda$
Moon's apparent Semidiameter.....	15°. 29,97 + $\delta S$
Apparent Distance of Star from Moon's centre .	15°. 33,22 + $\delta D$

$$\delta R = + 0,3747t + 0,5207\tau + 1,0097x + 0,0011y - 0,8268m - 0,0051\nu$$

$$\delta \lambda = + 0,2078t + 0,1926\tau - 0,0010x + 1,0124y + 2,0822m - 0,0129\nu$$

$$\delta S = - 0,0003t + 0,9300n$$

$$\delta D = - 0,9554\delta R + 0,9554e - 0,1435\delta \lambda + 0,1447f.$$

Final Equation :

$$-3''.25 = -0,9645x - 0,1464y + 0,9554e + 0,1447f - 0,3280t - 0,5251\tau + 0,0068\nu + 0,4911m - 0,9300n.$$

Disappearance of the Centre of Mars, Mar. 12, 15<sup>h</sup>. 10<sup>m</sup>. 20<sup>s</sup>. 71 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	218°. 6'. 34". 05 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc.....	156°. 36'. 32,40 + 0,5143 $\times (t + \tau) + x''$
Moon's Geocentric North Polar Distance .....	74°. 49'. 33,21 + 0,1944 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	56°. 7,99 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter.....	15°. 19,56 $\times (1 + 0,001 n)$
Geocentric R.A. of Mars' centre in arc.....	156°. 4'. 26,85 - 0,0136 $\times (t + \tau) + e''$
Geocentric N.P.D. of Mars' centre .....	75°. 43'. 19,51 - 0,0038 $\times (t + \tau) + f$
Geocentric Colatitude of the Observatory .....	37°. 58'. 20,37 + $\nu$
Moon's apparent Right Ascension in arc.....	156°. 5'. 0,17 + $\delta R$
Moon's apparent N.P.D. ....	75°. 28'. 12,41 + $\delta \lambda$
Moon's apparent Semidiameter.....	15°. 26,86 + $\delta S$
Mars' apparent R.A. in arc .....	156°. 4'. 19,95 - 0,0136 $\times (t + \tau) + e''$
Mars' apparent N.P.D. ....	75°. 43'. 28,07 - 0,0038 $\times (t + \tau) + f$
Mars' Semidiameter.....	6,40 + $\delta s$
Appar <sup>t</sup> . Distance of Mars' centre from Moon's centre	15°. 16,49 + $\delta D$

$$\delta R = + 0,4436t + 0,5173\tau + 1,0049x + 0,0025y - 1,9016m - 0,0118\nu$$

$$\delta \lambda = + 0,2285t + 0,1948\tau - 0,0022x + 1,0079y + 2,3397m - 0,0113\nu$$

$$\delta S = - 0,0006t + 0,9269n$$

$$\delta D = + 0,0412\delta R - 0,0412 \{e - 0,0136 (t + \tau)\} - 0,9991\delta \lambda + 0,9991 \{f - 0,0038 (t + \tau)\}.$$

Final Equation :

$$+ 10''.37 = + 0,0436x - 1,0068y - 0,0412e + 0,9991f - 0,2127t - 0,1766\tau + 0,0108\nu - 2,4158m - 0,9269n.$$

N.B. The above Greenwich Mean Time is deduced from B's observations. The final equation applies to the mean of B's and T's times of first immersion by substituting + 10''.45 +  $\delta s$  for the left-hand side, and to the mean of B's and T's times of total disappearance by substituting + 9''.96 -  $\delta s$ .



Reappearance of the Centre of Mars, Mar. 12, 15<sup>h</sup>.37<sup>m</sup>.30<sup>s</sup>.93 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	224. 55. 14.25 + 15.0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	156. 50. 30.60 + 0.5140 $\times (t + \tau) + x''$
Moon's Geocentric North Polar Distance .....	74. 54. 50.64 + 0.1950 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	56. 8.64 $\times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	15. 19.74 $\times (1 + 0.001n)$
Geocentric R.A. of Mars' centre in arc .....	156. 4. 4.65 - 0.0136 $(t + \tau) + e''$
Geocentric N.P.D. of Mars' centre.....	75. 43. 13.37 - 0.0038 $(t + \tau) + f$
Geocentric Colatitude of the Observatory .....	37. 58. 20.37 + $\nu$

Moon's apparent Right Ascension in arc.....	156. 17. 15.74 + $\delta R$
Moon's apparent N.P.D. ....	75. 34. 26.97 + $\delta \lambda$
Moon's apparent Semidiameter.....	15. 26.08 + $\delta S$
Mars' apparent R.A. in arc.....	156. 3. 57.30 - 0.0136 $(t + \tau) + e''$
Mars' apparent N.P.D.....	75. 43. 22.13 - 0.0038 $(t + \tau) + f$
Mars' Semidiameter .....	6.40 + $\delta s$
Appar <sup>t</sup> . Distance of Mars' centre from Moon's centre	15. 40.60 + $\delta D$

$$\delta R = +0.4593t + 0.5165\tau + 1.0038x + 0.0026y - 2.0025m - 0.0124\nu$$

$$\delta \lambda = +0.2304t + 0.1952\tau - 0.0023x + 1.0068y + 2.3950m - 0.0110\nu$$

$$\delta S = -0.0006t + 0.9261n$$

$$\delta D = +0.7967\delta R - 0.7967\{e - 0.0136(t + \tau)\} - 0.5686\delta \lambda + 0.5693\{f - 0.0038(t + \tau)\}.$$

Final Equation :

$$-14''.52 = +0.8011x - 0.5704y - 0.7967e + 0.5693f + 0.2442t + 0.3092\tau - 0.0037\nu - 2.9571m - 0.9261n.$$

N. B. The above Greenwich Mean Time is deduced from B's observations. The final equation applies to the mean of B's and T's times of first appearance by substituting  $-14''.14 - \delta s$  for the left-hand side, and to the mean of B's and T's times of total emersion by substituting  $-14''.62 + \delta s$ .

Disappearance of  $\epsilon$  Geminorum, April 4, 12<sup>h</sup>.47<sup>m</sup>.31<sup>s</sup>.33, +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	204. 58. 32.10 + 15.0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	99. 16. 33.15 + 0.5498 $\times (t + \tau) + x''$
Moon's Geocentric North Polar Distance.....	63. 46. 33.60 - 0.0042 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	54. 15.52 $\times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	14. 48.83 $\times (1 + 0.001n)$
Star's Right Ascension in arc.....	98. 44. 8.25 + $e''$
Star's N.P.D. ....	64. 43. 39.40 + $f$
Geocentric Colatitude of the Observatory .....	37. 58. 20.37 + $\nu$

Moon's apparent Right Ascension in arc.....	98. 40. 54.48 + $\delta R$
Moon's apparent N.P.D. ....	64. 29. 2.06 + $\delta \lambda$
Moon's apparent Semidiameter.....	14. 51.52 + $\delta S$
Apparent Distance of Star from Moon's centre	14. 54.63 + $\delta D$

$$\delta R = +0.5935t + 0.5481\tau + 0.9970x + 0.0051y - 2.1323m - 0.0132\nu$$

$$\delta \lambda = +0.0540t - 0.0064\tau - 0.0040x + 1.0029y + 2.5604m - 0.0073\nu$$

$$\delta S = -0.0005t + 0.8915n$$

$$\delta D = -0.1768\delta R + 0.1768e - 0.9807\delta \lambda + 0.9807f.$$

Final Equation :

$$-3''.11 = -0.1723x - 0.3844y + 0.1768e + 0.9807f - 0.1573t - 0.0906\tau + 0.0095\nu - 2.1340m - 0.8915n.$$



Reappearance of  $\epsilon$  Geminorum, April 4,  $13^h.4^m.39^s.75 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$209.16.20.70 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$99.25.58.65 + 0.5498 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$63.46.29.56 - 0.0036 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$54.15.42 \times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	$14.48.80 \times (1 + 0.001n)$
Star's Right Ascension in arc .....	$98.44.8.25 + e$
Star's N.P.D. ....	$64.43.39.40 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$
Moon's apparent Right Ascension in arc .....	$98.51.10.54 + \delta R$
Moon's apparent N.P.D. ....	$64.29.57.11 + \delta \lambda$
Moon's apparent Semidiameter .....	$14.50.95 + \delta S$
Apparent Distance of Star from Moon's centre	$15.6.48 + \delta D$

$$\delta R = + 0.6042t + 0.5477\tau + 0.9962x + 0.0050y - 2.0804m - 0.0129v$$

$$\delta \lambda = + 0.0532t - 0.0058\tau - 0.0039x + 1.0023y + 2.6179m - 0.0069v$$

$$\delta S = - 0.0005t + 0.8910n$$

$$\delta D = + 0.3802\delta R - 0.3802e - 0.9070\delta \lambda + 0.9073f.$$

Final Equation :

$$-15''.53 = +0.3824x - 0.9072y - 0.3802e + 0.9073f + 0.1821t + 0.2135\tau + 0.0014v - 3.1654m - 0.8910n.$$

Disappearance of  $\delta$  Virginis, May 9,  $12^h.9^m.5^s.00 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$229.50.13.50 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$194.16.42.90 + 0.5141 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$91.53.21.37 + 0.2541 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$58.22.22 \times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	$15.56.19 \times (1 + 0.001n)$
Star's Right Ascension in arc .....	$194.6.4.35 + e$
Star's N.P.D. ....	$92.52.40.70 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$
Moon's apparent Right Ascension in arc .....	$193.55.41.09 + \delta R$
Moon's apparent N.P.D. ....	$92.40.34.88 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.3.83 + \delta S$
Apparent Distance of Star from Moon's centre	$15.56.22 + \delta D$

$$\delta R = - 0.3903t + 0.5185\tau + 1.0085x - 0.0002y - 1.2726m - 0.0079v$$

$$\delta \lambda = + 0.2519t + 0.2562\tau + 0.0003x + 1.0079y + 2.8559m - 0.0100v$$

$$\delta S = - 0.0004t + 0.9638n$$

$$\delta D = - 0.6503\delta R + 0.6503e - 0.7591\delta \lambda + 0.7590f.$$

Final Equation :

$$+7''.61 = -0.6560x - 0.7650y + 0.6503e + 0.7590f - 0.4446t - 0.5316\tau + 0.0127v - 1.3404m - 0.9638n.$$



Reappearance of 48 Virginis May 9, 13<sup>h</sup>.13<sup>m</sup>.29<sup>s</sup>.38 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	245.58.58,05 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	194.49.51,45 + 0,5150 $\times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	92.9.43,59 + 0,2543 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory .....	58.24,51 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	15.56,81 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	194.6.4,35 + $e$
Star's N.P.D. ....	92.52.40,70 + $f$
Geocentric Colatitude of the Observatory .....	37.58.20,37 + $v$

Moon's apparent Right Ascension in arc .....	194.21.43,51 + $\delta R$
Moon's apparent N.P.D. ....	92.56.45,78 + $\delta \lambda$
Moon's apparent Semidiameter .....	16.2,50 + $\delta S$
Apparent Distance of Star from Moon's centre .....	16.9,44 + $\delta D$

$$\delta R = +0,4202t + 0,5183\tau + 1,0065x - 0,0003y - 1,6990m - 0,0106v$$

$$\delta \lambda = +0,2496t + 0,2560\tau + 0,0004x + 1,0059y + 2,8385m - 0,0101v$$

$$\delta S = -0,0006t + 0,9625n$$

$$\delta D = +0,9663\delta R - 0,9663e + 0,2527\delta \lambda + 0,2529f.$$

Final Equation:

$$-6'',94 = +0,9727x + 0,2539y - 0,9663e - 0,2529f + 0,4696t + 0,5655\tau - 0,0127v - 0,9244m - 0,9265n.$$

Disappearance of 35 Capricorni, Sept. 4, 11<sup>h</sup>.11<sup>m</sup>.17<sup>s</sup>.25 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	331.39.20,70 + 15,0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	319.36.17,55 + 0,6311 $\times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	110.54.34,73 - 0,1788 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory .....	60.20,34 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	16.28,44 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	319.45.10,65 + $e$
Star's N.P.D. ....	111.49.20,30 + $f$
Geocentric Colatitude of the Observatory .....	37.58.20,37 + $v$

Moon's apparent Right Ascension in arc .....	319.27.55,10 + $\delta R$
Moon's apparent N.P.D. ....	111.52.7,26 + $\delta \lambda$
Moon's apparent Semidiameter .....	16.33,18 + $\delta S$
Apparent Distance of Star from Moon's centre .....	16.15,58 + $\delta D$

$$\delta R = +0,4669t + 0,6384\tau + 1,0114x - 0,0009y - 0,5082m - 0,0032v$$

$$\delta \lambda = -0,1919t - 0,1791\tau + 0,0009x + 1,0047y + 3,4687m - 0,0050v$$

$$\delta S = -0,0002t + 0,9932n$$

$$\delta D = -0,9145\delta R + 0,9145e + 0,1702\delta \lambda - 0,1721f.$$

Final Equation:

$$+17'',60 = -0,9248x + 0,1719y + 0,9145e - 0,1721f - 0,4595t - 0,6143\tau + 0,0020v + 1,0552m - 0,9932n.$$



Reappearance of 35 Capricorni, Sept. 4, 12<sup>h</sup>.17<sup>m</sup>.40<sup>s</sup>.21 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	348°.17'.48".75 + 15".0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	320°.18'.7".65 + 0".6294 $\times (t + \tau) + x$
Moon's Geocentric North Polar Distance.....	110°.42'.37".36 - 0".1814 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	60".20,15 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	16".28,39 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	319°.45'.10".65 + $\theta$
Star's N.P.D. ....	111°.49'.20".30 + $f$
Geocentric Colatitude of the Observatory.....	37°.58'.20".37 + $\nu$

Moon's apparent Right Ascension in arc .....	319°.59'.20".84 + $\delta R$
Moon's apparent N.P.D. ....	111°.38'.47".25 + $\delta \lambda$
Moon's apparent Semidiameter .....	16".32,23 + $\delta S$
Apparent Distance of Star from Moon's centre .	16".52,15 + $\delta D$

$$\delta R = +0,4821t + 0,6362\tau + 1,0102x - 0,0021y - 1,1384m - 0,0071\nu$$

$$\delta \lambda = -0,2093t - 0,1809\tau + 0,0019x + 1,0037y + 3,3818m - 0,0056\nu$$

$$\delta S = -0,0003t + 0,9922n$$

$$\delta D = +0,7248\delta R - 0,7248e - 0,6261\delta \lambda + 0,6249f.$$

Final Equation:

$$-19'',92 = +0,7311x - 0,6299y - 0,7248e + 0,6249f + 0,4808t + 0,5744\tau + 0,0017\nu - 2,9423m - 0,9922n.$$

Disappearance of  $\omega$  Sagittarii, Sept. 30, 6<sup>h</sup>.17<sup>m</sup>.31<sup>s</sup>.12 +  $t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	283°.38'.20".85 + 15".0411 $\times t$
Moon's Geocentric Right Ascension in arc .....	296°.17'.51".00 + 0".6537 $\times (t + \tau) + x$
Moon's Geocentric North Polar Distance.....	115°.48'.19".19 - 0".0790 $\times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	59".24,31 $\times [9,9990916] \times (1 + 0,001 m)$
Moon's Geocentric Semidiameter .....	16".13,18 $\times (1 + 0,001 n)$
Star's Right Ascension in arc .....	296°.43'.54".90 + $\theta$
Star's N.P.D. ....	116°.40'.59".20 + $f$
Geocentric Colatitude of the Observatory.....	37°.58'.20".37 + $\nu$

Moon's apparent Right Ascension in arc .....	296°.26'.49".87 + $\delta R$
Moon's apparent N.P.D. ....	116°.46'.4".00 + $\delta \lambda$
Moon's apparent Semidiameter .....	16".16,36 + $\delta S$
Apparent Distance of Star from Moon's centre .	16".4,93 + $\delta D$

$$\delta R = +0,4864t + 0,6612\tau + 1,0116x + 0,0013y + 0,5451m + 0,0034\nu$$

$$\delta \lambda = -0,0640t - 0,0800\tau - 0,0011x + 1,0031y + 3,4757m - 0,0035\nu$$

$$\delta S = +0,0001t + 0,9764n$$

$$\delta D = -0,8474\delta R + 0,8474e + 0,3148\delta \lambda - 0,3169f.$$

Final Equation:

$$+11'',43 = -0,8576x + 0,3147y + 0,8474e - 0,3169f - 0,4325t - 0,5855\tau - 0,0040\nu + 0,6322m - 0,9764n.$$



Reappearance of  $\omega$  Sagittarii, Sept. 30,  $7^h.31^m.24^s.95 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$302.9.50.40 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$297.6.7.65 + 0.6529 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$115.42.21.82 - 0.0826 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59.24.75 \times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	$16.13.30 \times (1 + 0.001m)$
Star's Right Ascension in arc .....	$296.43.54.90 + e$
Star's N.P.D. ....	$116.40.59.20 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc .....	$297.2.30.79 + \delta R$
Moon's apparent N.P.D. ....	$116.40.26.26 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.16.70 + \delta S$
Apparent Distance of Star from Moon's centre	$16.37.64 + \delta D$

$$\delta R = +0.4822t + 0.6607\tau + 1.0119x - 0.0005y - 0.2194m - 0.0014v$$

$$\delta \lambda = -0.0891t - 0.0826\tau + 0.0004x + 1.0034y + 3.4964m - 0.0034v$$

$$\delta S = -0.0001t + 0.9767n$$

$$\delta D = +0.8931\delta R - 0.8931e - 0.0342\delta \lambda + 0.0318f.$$

Final Equation :

$$-20''.94 = +0.9036x - 0.0348y - 0.8931e + 0.0318f + 0.4337t + 0.5929\tau + 0.0011v - 0.3157m - 0.9767n.$$

It is probable from this result that the observed time was considerably too late.

Reappearance of  $\Lambda$  Sagittarii, Sept. 30,  $7^h.54^m.34^s.37 + t^s + \tau^s$  Greenwich Mean Solar Time.

Right Ascension of Zenith in arc .....	$307.58.8.70 + 15.0411 \times t$
Moon's Geocentric Right Ascension in arc .....	$297.21.14.70 + 0.6526 \times (t + \tau) + x$
Moon's Geocentric North Polar Distance .....	$115.40.25.22 - 0.0838 \times (t + \tau) + y$
Moon's Horizontal Parallax at the Observatory	$59.24.88 \times [9.9990916] \times (1 + 0.001m)$
Moon's Geocentric Semidiameter .....	$16.13.34 \times (1 + 0.001m)$
Star's Right Ascension in arc .....	$297.31.19.20 + e$
Star's N.P.D. ....	$116.35.13.30 + f$
Geocentric Colatitude of the Observatory .....	$37.58.20.37 + v$

Moon's apparent Right Ascension in arc .....	$297.13.42.12 + \delta R$
Moon's apparent N.P.D. ....	$116.38.16.08 + \delta \lambda$
Moon's apparent Semidiameter .....	$16.16.63 + \delta S$
Apparent Distance of Star from Moon's centre	$16.2.60 + \delta D$

$$\delta R = +0.4843t + 0.6603\tau + 1.0117x - 0.0011y - 0.4579m - 0.0028v$$

$$\delta \lambda = -0.0968t - 0.0835\tau + 0.0009x + 1.0032y + 3.4824m - 0.0035v$$

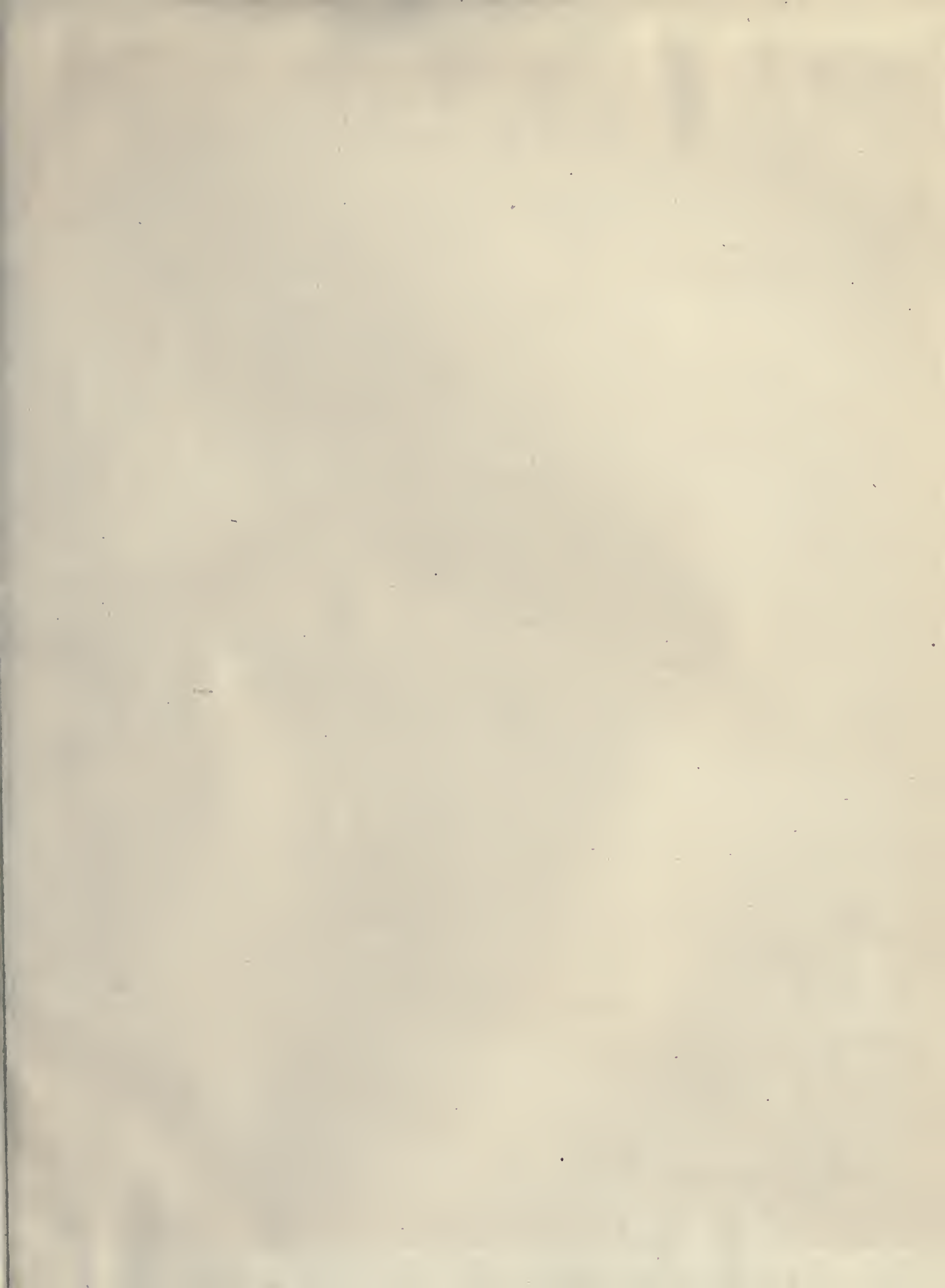
$$\delta S = -0.0001t + 0.9766n$$

$$\delta D = -0.8778\delta R + 0.8778e + 0.1888\delta \lambda - 0.1910f.$$

Final Equation :

$$+14''.03 = -0.8879x + 0.1903y + 0.8778e - 0.1910f - 0.4433t - 0.5954\tau + 0.0018v + 1.0592m - 0.9766n.$$











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